

# MODSIM

## 2015

Partnering  
with industry and  
the community for  
innovation and impact  
through modelling

# Program

21st International Congress on  
Modelling and Simulation

23rd National Conference of the Australian  
Society for Operations Research — ASOR 2015

DSTO led Defence Operations Research  
Symposium — DORS 2015



**Gold Coast**  
**29 November**  
**to 4 December**  
**QUEENSLAND**  
**AUSTRALIA**



[www.mssanz.org.au/modsim2015](http://www.mssanz.org.au/modsim2015)

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# Highlights

## Sunday 29 November 2015

- 15:00 Registration  
Registration and Information Desk, Ground Floor,  
Gold Coast Convention and Exhibition Centre
- 17:00 Opening for MODSIM 2015  
Meeting Rooms 5 & 6  
Dr David Post, MSSANZ President
- 17:15 Plenary Speaker  
Meeting Rooms 5 & 6  
Associate Professor Mary Myerscough  
University of Sydney, Australia  
*Why do hives die? Using models to explore the mechanism of honey bee colony collapse*
- 18:15 Welcome reception  
Foyer G

## Monday 30 November 2015

- 07:30 Registration  
Registration and Information Desk, Ground Floor
- 08:30 Opening session for MODSIM 2015  
Arena 1B  
Dr David Post, MSSANZ President
- 09:00 Plenary Speaker  
Arena 1B  
Professor Kerrie Mengersen  
Queensland University of Technology, Australia  
*You Say, I Hear: Case studies of academic-industry engagement*
- 18:00 ASOR Annual General Meeting  
Central Room C

## Tuesday 1 December 2015

- 07:30 Registration  
Registration and Information Desk, Ground Floor
- 08:30 Plenary Speaker  
Arena 1B  
Dr Rob Vertessy FTSE  
Bureau of Meteorology, Australia  
*How modelling propels environmental intelligence at the Bureau of Meteorology*
- 13:45 Plenary Speaker  
Arena 1B  
Dr Christina Burt  
University of Melbourne, Australia  
*Hybrid approaches for challenging scheduling problems in open pit mining*
- 18:00 MSSANZ Annual General Meeting  
Meeting Room 5

## Wednesday 2 December 2015

MODSIM rest day

## Thursday 3 December 2015

- 07:30 Registration  
Registration and Information Desk, Ground Floor
- 08:30 Plenary Speaker  
Arena 1B  
Professor Howard Wheeler  
The University of Saskatchewan, Canada  
*Modelling hydrological extremes in a data sparse environment – experience from Western Canada*
- 13:45 Plenary Speaker  
Arena 1B  
Associate Professor Jason Evans  
University of New South Wales, Australia  
*High-resolution climate change projections over Australia: producing policy-relevant information*
- 19:00 Pre-dinner drinks
- 19:30 Gala Dinner  
Hall 3 & 4

## Friday 4 December 2015

- 08:30 Registration  
Registration and Information Desk, Ground Floor
- 14:00 Announcement of MODSIM Student Prizes  
Closing for MODSIM  
Foyers A & B

**Sunday 29 November**

15:00	Registration and Information Desk	Ground Floor
17:00	Opening for MODSIM/ASOR/DORS 2015	Dr David Post, MSSANZ President Meeting Rooms 5 & 6
17:15	Plenary	Associate Professor Mary Myerscough Why do hives die? Using models to explore the mechanism of honey bee colony collapse Meeting Rooms 5 & 6
18:15	Welcome reception	Foyer G

**Monday 30 November**

7:30	Registration and Information Desk	Ground Floor
8:30	Opening session for MODSIM 2015	Dr David Post, MSSANZ President Arena 1B
9:00	Plenary	Professor Kerrie Mengersen You Say, I Hear: Case studies of academic-industry engagement Arena 1B

10:00	Morning tea	Foyers A & B					
	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	A4. Modelling of bushfire dynamics, fire weather, impact and risk	C6. Robotics, automation, machine condition monitoring automation and system of systems	C5. Modelling, simulation and optimization in engineering	G4. Projections of regional climate change: from modelling to applications	B4. Agricultural systems	F13. Conservation planning and biodiversity	
10:30	Approaches to simulation of prescribed burns in forests of southern Australia <i>Walsh, S.F., Duff, T.J., Loschiavo, J., Chong, D.M., Tolhurst, K.G. and Di Stefano, J.</i>	An algorithm for the automatic detection of abnormal mitotic figure towards the automated diagnosis of melanoma <i>Anvar, A.P., Shi, P. and Lim, C.-C.</i>	A distributed Session Initiation Protocol solution for mobile ad hoc networks using Elliptic Curve Cryptography <i>Aburumman, A., Seo, W.J., Yang, A. and Choo, K.-K.R.</i>	Large-scale modelling of environments favourable for dry lightning occurrence <i>Dowdy, A.J.</i>	Spatially discrete linear optimization of manure transports with a focus on supply for biomass power plants in agriculture <i>Biberacher, M. and Warnecke, S.</i>	Setting priorities for river restoration using habitat suitability models in Flanders, Belgium <i>Bennetsen, E., Gobeyn, S., Verhelst, P. and Goethals, P.L.M.</i>	
10:50	Invited paper: Fire spread prediction using a lagged weather forecast ensemble <i>Louis, S.A. and Matthews, S.</i>	Mobile data acquisition technology evolution in hydrogeochemical applications <i>Golodoniuc, P., Klump, J., Reid, N. and Gray, D.</i>	Speedup techniques for molecular dynamics simulations of the interaction of acoustic waves and nanomaterials <i>Bennett, H.A., Zander, A.C., Cazzolato, B.S. and Huang, D.M.</i>	NARCLiM model performance including teleconnections with climate modes <i>Evans, J.P., Olson, R., Fita, L., Argüeso, D. and Di Luca, A.</i>	Model-based explorations to assess climate risk to summer crop production and its effects on wheat yield in the central wheatbelt of Western Australia <i>Chen, C., McNee, M., Lawes, R. and Fletcher, A.</i>	Integrated planning of linear infrastructure and conservation offsets <i>Bunton, J.D., Ernst, A.T., Hanson, J.O., Beyer, H.L., Hammill, E., Runge, C.A., Venter, O., Possingham, H.P. and Rhodes, J.R.</i>	
11:10	An augmented level set model for the propagation of bushfire fronts <i>Berres, S. and Cárcamo, N.</i>	A new version of Autonomous Ocean Energy Recovery System for oceanic applications <i>Jiang, Y.M. and Anvar, A.M.</i>	Modeling neural networks and curvelet thresholding for denoising Gaussian noise <i>Bhosale, B.</i>	Status and directions for the CORDEX Initiative <i>Evans, J.P., Timbal, B. and Katzfey, J.</i>	Understanding, managing and forecasting <i>Pea seed-borne mosaic virus</i> in field pea <i>Congdon, B., Renton, M., Coutts, B.A., van Leur, J.A.G. and Jones, R.A.C.</i>	Life on the fringe: choosing spatially explicit conservation actions for coastal ecosystems <i>Chamberlain, D.A., Possingham, H.P. and Phinn, S.</i>	
11:30	Integration of remote sensing data with bushfire prediction models <i>Miller, C., Hilton, J., Lemiale, V., Huston, C., Sullivan, A.L. and Prakash, M.</i>	Negotiation Protocol Comparison for task allocation in highly dynamic environments <i>Noack, K., Marsh, L. and Shekh, S.</i>	Using Workspace to automate workflow processes for modelling and simulation in engineering <i>Cleary, P.W., Thomas, D., Bolger, M., Hetherington, L., Rucinski, C. and Watkins, D.</i>	Projected change in frequency, intensity and duration of atmospheric temperature inversions for Southeast Australia <i>Ji, F., Evans, J.P., Scorgie, Y., Jiang, N., Argüeso, D. and Di Luca, A.</i>	A new model to investigate whether regional crop rotation strategies can protect crops from fungal pathogens <i>Crete, R. and Renton, M.</i>	Representativeness of Protected Areas <i>Chauvenet, A.L.M., Kuempel, C. and Possingham, H.P.</i>	

Sunday 29 November

Monday 30 November

Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
A2. Solving practical inverse problems	L2. Large scale hydrological modelling to improve water resources assessment and prediction	Stream M. Energy, integrated infrastructure and urban planning	DORS 2015 D3. Systems analysis and modelling to support capability development	L3. Fusion of remote sensing and model data for operational land and water management	ASOR 2015 J8. Environment and natural resources
<b>Invited paper:</b> On the efficient use of satellite data to improve volcanic ash dispersion modelling <i>Zidikheri, M.J., Potts, R. and Lucas, C.</i>	<b>Stream L. Water resources</b> <b>KEYNOTE:</b> <b>Unlocking development in northern Australia: have we found the key?</b> <i>Stone, P.</i>	Additive versus Multiplicative Seasonality in Solar Radiation Time Series <i>Boland, J.</i>	Welcome to DORS 2015	Use of remote sensing data to improve hydraulic model for real time flood wave routing prediction <i>Grimaldi, S., Li, Y., Wright, A., Pauwels, V.R.N. and Walker, J.P.</i>	Managing invasive species under structural uncertainty using partially observable Markov decision processes <i>Peron, M., Chades, I. and Becker, K.H.</i>
Rainfall simulation from an inverse problems perspective <i>Piantadosi, J. and Anderssen, R.S.</i>		How can decentralised generators influence distribution networks loads? <i>Boulaire, F.A. and Drogemuller, R.M.</i>	<b>Invited paper:</b> Feasible Scenario Spaces: a new way of measuring capability impacts <i>Bowden, F.D.J., Pincombe, B. and Williams, P.B.</i>	Performance of remotely sensed and modelled soil moisture products across Australia and implications for data assimilation <i>Holgate, C.M., de Jeu, R.A.M., van Dijk, A.I.J.M. and Liu, Y.Y.</i>	Understanding the impact of removing a fence between two game ranches with different management objectives <i>Alrashidi, M.E., Hearne, J.W. and McArthur, L.</i>
Estimating the unit hydrograph and effective rainfall from observed output <i>Croke, B.F.W.</i>	Using hydrologic signatures to predict salient runoff characteristics and daily runoff in ungauged catchments <i>Zhang, Y.Q., Vaze, J. and Chiew, F.H.S.</i>	Least cost combination of renewable generators, storage devices and transmission system in the NEM <i>Wu, Y. and Reedman, L.</i>	From System Thinking to Capability Thinking using the Thinking Capability Analysis Technique <i>Abbass, H.A. and Young, L.</i>	Evaluation of hydrological models for using soil moisture observations <i>Li, Y., Pauwels, V.R.N., Walker, J.P., Grimaldi, S. and Wright, A.</i>	A network-based approach to bushfire fuel management <i>Matsypura, D. and Prokopyev, O.</i>
Calibration of hydrological models allowing for timing offsets <i>Lerat, J. and Anderssen, R.S.</i>	<b>Invited paper:</b> An integrated continental hydrological modelling system – AWRA <i>Vaze, J., Dutta, D., Crosbie, R., Viney, N., Penton, D., Teng, J., Wang, B., Kim, S., Hughes, J., Yang, A., Vleeshouwer, J., Peeters, L., Ticehurst, C., Shi, X., Dawes, W., Frost, A. and Hafeez, M.</i>	A simple model for estimating the diffuse fraction of solar irradiance from photovoltaic array power output <i>Engerer, N.A. and Xu, Y.</i>	The application of the Australian Defence Architecture Framework to Maritime Force Assessment <i>Chisholm, J.</i>	Assessing the importance of irrigation inputs for accurate predictions of streamflow and actual evapotranspiration in an irrigated catchment <i>McInerney, D.J., Githui, F., Thyer, M.A., Thayalakumaran, T., Kavetski, D., Liu, M. and Kuczera, G.</i>	Modelling fire crew requirements for bushfire scenarios <i>Higgins, A.J. and Slijepcevic, A.</i>

## Monday 30 November

	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	A4. Modelling of bushfire dynamics, fire weather, impact and risk	C6. Robotics, automation, machine condition monitoring automation and system of systems	C5. Modelling, simulation and optimization in engineering	G4. Projections of regional climate change: from modelling to applications	B4. Agricultural systems	F13. Conservation planning and biodiversity	
11:50	<b>Stream A. Applied and computational mathematics</b> <b>KEYNOTE:</b> <b>Numerical modelling of wildland fire spread on the windward and leeward sides of a ridge</b>	Uncovering Industrial Control Systems vulnerabilities by examining SCADA Virtual Packages and their communication protocols <i>Seo, W.J. and Sitnikova, E.</i>	Team oriented execution models for multi-agent simulation of air combat <i>McDonald, K., Benke, L. and Papasimeon, M.</i>	A new quantile projection method for producing representative future daily climate based on mixed effect state-space model and observations <i>Jin, H., Kokic, P., Hopwood, G., Ricketts, J.H. and Crimp, S.</i>	<b>Invited paper:</b> A new evaluation system to estimate the impact of Coal Seam Gas activity on economic returns of agriculture <i>Marinoni, O. and Navarro, J.</i>	Assessing the cost-effectiveness of invasive species management: a decision tool for biodiversity conservation <i>Davis, K.J., Kragt, M.E. and Pannell, D.J.</i>	
12:10	<i>Simpson, C.C., Sharples, J.J. and Evans, J.P.</i>	A fading memory model for indoor evacuation – preliminary results <i>Zhao, H., Ronald, N. and Winter, S.</i>	Simulation of crack generation on a concrete wall <i>Mukai, N., Fujita, S. and Chang, Y.</i>	Comparison of the seasonal cycle of tropical and subtropical precipitation over East Asian monsoon area <i>Li, Y., Zhang, G., Huang, B. and Shi, X.</i>	Statistical ensemble models to forecast the Australian macadamia crop <i>Mayer, D.G. and Stephenson, R.A.</i>	A reusable scientific workflow for conservation planning <i>Guru, S.M., Dwyer, R.G., Watts, M.E., Dinh, M.N., Abramson, D., Nguyen, H.A., Campbell, H.A., Franklin, C.E., Clancy, T. and Possingham, H.P.</i>	
12:30	Lunch	Foyers A & B					
	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	A4. Modelling of bushfire dynamics, fire weather, impact and risk	B1. New challenges for agricultural systems modelling and software	C5. Modelling, simulation and optimization in engineering	G4. Projections of regional climate change: from modelling to applications	B4. Agricultural systems	F13. Conservation planning and biodiversity	
13:30	<b>Invited paper:</b> CFD techniques for the simulation of experimental prescribed fires <i>Mueller, E.V., Mell, W.E., Skowronski, N.S., Clark, K.L., Gallagher, M.R., Kremens, R.L., Thomas, J.C., El Houssami, M., Hadden, R.M. and Simeoni, A.</i>	Unified Plant Growth Model (UPGM) development: challenges and application from a component-based and simulation modeling framework perspective <i>Ascough II, J.C., McMaster, G.S., Lighthart, N.P., Edmunds, D.A. and David, O.</i>	Network analysis of fuzzy bi-serial and parallel servers with a multistage flow shop model <i>Sharma, S., Gupta, D. and Seema</i>	Climate modelling projections to price climate derivatives <i>Little, L.R., Hobday, A., Parslow, J., Davies, C. and Grafton, R.Q.</i>	<b>Stream B. Biological systems</b> <b>KEYNOTE:</b> <b>Guidelines for the admissibility of farm and catchment models in the New Zealand environment courts</b> <i>Parshotam, A.</i>	The biodiversity and climate change virtual laboratory: how ecology and big data can be utilised in the fight against vector-borne diseases <i>Hallgren, W., Beaumont, L., Bowness, A., Chambers, L., Graham, E., Holewa, H., Laffan, S., Mackey, B., Nix, H., Price, J., Vanderwal, J., Warren, R. and Weis, G.</i>	
13:50	WRF-Fire simulation of pyro-convection under the influence of low-level jet wind profiles <i>Katurji, M., Simpson, C. and Seto, D.</i>	Describing variations in microclimate on hill country and its effect on pasture growth in APSIM simulations <i>Cichota, R. and Vogeler, I.</i>	The effectiveness of using CFD modelling in optimising the cooling of a low power compute server <i>Wakes, S.J., Cartwright, S. and Trotman, A.</i>	Comparison of northern hemispheric anthropogenic black carbon emissions from global datasets <i>Paunu, V.-V. and Kupiainen, K.</i>		Providing context for the land-sharing and land-sparing debate <i>Law, E.A. and Wilson, K.A.</i>	
14:10	WRF-Fire simulation of lateral fire spread in the Bendora Fire on 18 January 2003 <i>Simpson, C., Sharples, J.J. and Evans, J.P.</i>	Using APSIM, C# and R to create and analyse large datasets <i>Fainges, J.L.</i>	Bi-criteria scheduling on parallel machines under fuzzy processing time <i>Seema, Sharma, S. and Khanna, G.</i>	Multi-model ensemble projections of future extreme temperature change using a statistical downscaling method in eastern Australia <i>Wang, B., Liu, D.L., Macadam, I., Alexander, L.V., Abramowitz, G. and Yu, Q.</i>		Distribution models of temperate habitat-forming species on the Continental Shelf in Eastern Australia: setting the baseline to monitor and predict future changes <i>Marzloff, M.P., Barrett, N., Holbrook, N., Oliver, E.C.J., James, L. and Johnson, C.R.</i>	



## Monday 30 November

Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
A2. Solving practical inverse problems	L2. Large scale hydrological modelling to improve water resources assessment and prediction	Stream M. Energy, integrated infrastructure and urban planning	DORS 2015 D3. Systems analysis and modelling to support capability development	L3. Fusion of remote sensing and model data for operational land and water management	ASOR 2015 J8. Environment and natural resources
A continuous genetic algorithm for the calibration of a sedimentation model <i>Berres, S., Coronel, A. and Lagos, R.</i>	Modelling delayed impact of historical land use change on stream flow and salinity in the south-eastern Australia <i>Cheng, X., Christy, B., Gill, B., Thayalakumaran, T., Weeks, A. and Burkitt, J.</i>	Assessment of solar and wind synergy in Australia <i>Prasad, A. and Kay, M.</i>	Beyond why to what and how: the use of systems thinking to support problem formulation in systems engineering applications <i>Elsawah, S., McLucas, A. and Ryan, M.</i>	Integrating GRACE and SMOS data into a hydrological model using an ensemble Kalman Filter <i>Tian, S., Tregoning, P., Renzullo, L.J., van Dijk, A.I.J.M. and Walker, J.P.</i>	Wavelet characterisation of eucalypt flowering and the influence of climate and budding <i>Hudson, I.L., Kang, I. and Keatley, M.R.</i>
Toward a generic framework for the multi-physical inversion of large-scale geophysical data sets <i>Gross, L. and Schaa, R.</i>	Blending field observations and AWRA outputs to estimate groundwater recharge in the Clarence-Moreton basin, eastern Australia <i>Crosbie, R., Raiber, M., Cui, T. and Viney, N.</i>	Discovering the effect of RES on risk premia in electricity markets <i>Stefani, S., Falbo, P. and Felletti, D.</i>	Improvements in analysing failure of Defence systems for Operations Analysis <i>Goss, T., Thuraishingham, S., Ide, K. and Allison, K.</i>	Towards operational hydrological model calibration using streamflow and soil moisture measurements <i>Zhang, Y., Li, Y., Walker, J.P., Pauwels, V.R.N. and Shahrban, M.</i>	Using spatial fishing data and DEA to inform spatial fisheries management <i>Pascoe, S., Dath, K. and Innes, J.</i>
Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
A2. Solving practical inverse problems	L2. Large scale hydrological modelling to improve water resources assessment and prediction	F3. Modelling for surveillance and eradication of invasive species	DORS 2015 D3. Systems analysis and modelling to support capability development	L12. Shared vision modeling for actual decisions in water resources management	ASOR 2015 J8. Environment and natural resources & J1. Industrial sustainability
Reduced Basis Model Reduction for Statistical Inverse Problems with applications in Tsunami Modelling <i>de Baar, J.H.S., Harding, B., Hegland, M. and Oehmigara, C.</i>	<b>Invited paper:</b> Water Accounting for sustainable water resources management – role of hydrological modelling <i>Dutta, D., Kim, S., Vaze, J., Hughes, J. and Yang, A.</i>	Models to test and operationalise control strategies for crown-of-thorns starfish on the Great Barrier Reef <i>Condie, S.A., Hock, K., Beeden, R., Morello, E.B., Plaganyi, E.E. and Gorton, R.</i>	Towards Defence strategic data planning <i>Jiang, L., Tay, N., Zadeh, H.S. and Bulluss, G.</i>	Geo-referenced exposure modelling of down-the-drain chemicals in river basins supports selection of adequate reduction strategies <i>Berlekamp, J., Kehrein, N. and Klasmeier, J.</i>	A mixed integer programming model to optimize environmental water releases in river systems <i>Kaur, S., Horne, A., Szemis, J.M., Lowe, L., Costa, A.M., Stewardson, M., Nathan, R., Webb, J.A., Boland, N., Ravalico, J. and Velik-Lord, B.</i>
Multi-fidelity surrogate-based parameter estimation for a sailing yacht hull <i>de Baar, J.H.S. and Roberts, S.G.</i>	Whole of system calibration of river models: Weighting functions and their effect on individual gauge and system performance <i>Hughes, J.D., Kim, S.S.H., Yang, A., Dutta, D. and Vaze, J.</i>	Modelling habitat suitability and connectivity of feral pigs for exotic disease surveillance in northern Australia <i>Froese, J.G., Smith, C.S., McAlpine, C.A., Durr, P.A. and van Klinken, R.D.</i>	Supporting Force Structure Review through graph visualisation and capability view improvements <i>Lo, E.H.S., Tay, N. and Bulluss, G.J.</i>	Combining water supply and flood mitigation requirements in multi-purpose reservoir optimization <i>Frongia, S., Liberatore, S., Sechi, G.M., Sulis, A. and Zucca, R.</i>	Where does oxygen extinction occur in a soil profile? <i>Cook, F.J. and Knight, J.H.</i>
Interpolatory Inequalities for First Kind Convolution Volterra Integral Equations <i>Hegland, M. and Anderssen, R.S.</i>	Development of a parallel computing enabled optimisation tool for hydrological model calibration <i>Yang, A., Hughes, J., Dutta, D., Kim, S. and Vaze, J.</i>	Using connectivity networks to estimate and allocate the efforts needed to control the crown-of-thorns starfish outbreaks on the Great Barrier Reef <i>Hock, K. and Mumby, P.J.</i>	Application of desktop human in the loop simulation to study air operations <i>Sheehan, P. and Mukerjee, J.</i>	Adapting ANUGA model for border-check irrigation simulation <i>Githui, F., Hussain, A. and Morris, M.</i>	Prediction of shear strength of concrete structures based on ANFIS <i>Choi, K.-K., Kim, J.-C. and Kim, H.-S.</i>

## Monday 30 November

	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	A4. Modelling of bushfire dynamics, fire weather, impact and risk	B1. New challenges for agricultural systems modelling and software	C5. Modelling, simulation and optimization in engineering	G4. Projections of regional climate change: from modelling to applications	B4. Agricultural systems	F13. Conservation planning and biodiversity	
14:30	Bushfire modelling with coupled atmospheric and fire propagation models <i>Toivanen, J., Reeder, M., Davies, L. and Lane, T.</i>	Modelling mixed farming enterprises using AusFarm <i>Herrmann, N., Mayberry, D., Hochman, Z. and MacLeod, N.</i>	An investigation into the modelling challenges for overland flow path mapping and the analysis of practical solutions <i>Jafari, A., Mirfenderesk, H., Carroll, D., van Doorn, R., Chong, E. and Vis, S.</i>	ACCESS model simulation of ENSO, IPO and rainfall variability in eastern Australia <i>Wellby, S.J.</i>	Covariance analysis of sugarcane variety experiments ( <i>Saccharum</i> spp.) in contrasting environments <i>Rodríguez, S., Berres, S., Antúnez, G., Pérez, Y., Silveira, L., Rodríguez, L., Guevara, F., Expósito, I., Torres-Ulloa, C., Valle, S., Conci, M.C., Cupri, G. and Mercado, A.</i>	Delineating environmental envelopes to improve mapping of species distributions, via a hurdle model with CART &/or MaxEnt <i>Pirathiban, R., Williams, K.J. and Low Choy, S.J.</i>	
14:50	Pyroconvective interaction of two merged fire lines: curvature effects and dynamic fire spread <i>Thomas, C.M., Sharples, J.J. and Evans, J.P.</i>	APSIM Next Generation: The final frontier? <i>Holzworth, D., Huth, N.I., Fainges, J., Herrmann, N.I., Zürcher, E., Brown, H., Snow, V., Verrall, S., Cichota, R., Doherty, A., deVoil, P., McLean, G. and Bridger, J.</i>		Climate change impacts on rainfall erosivity and hillslope erosion in NSW <i>Yang, X., Yu, B. and Zhu, Q.G.</i>	Predicting pasture nitrogen content using ANN Models and thermal images <i>Safa, M. and Maxwell, T.M.R.</i>	A spatially structured metapopulation model in a stochastic environment <i>Smith, A.G.</i>	
15:10	Revisiting the King's Cross Underground disaster with implications for modelling wildfire eruption <i>Edgar, R.A., Sharples, J.J. and Sidhu, H.S.</i>	Agricultural systems modelling and software: current status and future prospects <i>Holzworth, D.P., Snow, V., Janssen, S., Athanasiadis, I.N., Donatelli, M., Hoogenboom, G., White, J. and Thorburn, P.</i>		Modelling hydrological changes in New South Wales under future climate change <i>Young, J., Rahman, J. and Littleboy, M.</i>		A comparison of adaptive management and real options approaches for environmental decisions under uncertainty <i>Chadès, I., Tarnopolskaya, T., Dunstall, S., Rhodes, J. and Tulloch, A.</i>	
15:30	Afternoon tea	Foyers A & B					
	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	A4. Modelling of bushfire dynamics, fire weather, impact and risk	C7. Maritime and aerospace unmanned vehicles modelling and simulation	B1. New challenges for agricultural systems modelling and software	E3. Technology and innovation	B4. Agricultural systems		
16:00	A fire regime risk management tool <i>Penman, T.D., Ababei, D., Chong, D.M.O., Duff, T.J. and Tolhurst, K.G.</i>	A quadrotor UAV navigational command and control aid: A landing pad detection and localisation system <i>Anvar, A.P., Kalampattel, R., Oliveria, C.S. and Anvar, A.M.</i>	Big data technologies for agricultural systems research <i>Janssen, S.J.C., Knapen, M.R., van Randen, Y., Mouchakis, G., Konstantopoulos, S. and Lokers, R.</i>	Modelling volatility spillovers for bio-ethanol, sugarcane and corn <i>Chang, C.-L., McAleer, M. and Wang, Y.-A.</i>	Agricultural productivity assessment and farming systems modelling to identify costs and opportunities from Coal Seam Gas in the Surat Basin <i>Samalca, E., Huth, N. and Slaughter, G.</i>		
16:20	Dynamic development of the 2013 Aberfeldy fire <i>Quill, R. and Sharples, J.J.</i>	Modelling and simulation of the Autonomous Underwater Vehicle (AUV) Robot <i>Muhyiuddin, M.D., Hassan, Z., Jia, C., Zhou, H., Pan, R. and Anvar, A.M.</i>	A framework for uncertainty evaluation of agricultural computer simulation models with a focus on allocation of uncertainty to model components <i>Meenken, E., Triggs, C., Brown, H. and Teixeira, E.</i>	How are VIX and Stock Index ETF related? <i>Chang, C.-L., Hsieh, T.-L. and McAleer, M.</i>	Does adding a spatial component to a herbicide resistance population model improve understanding and predictions of the buildup of herbicide resistance over time? <i>Somerville, G.J. and Renton, M.</i>		



## Monday 30 November

Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
A2. Solving practical inverse problems	L2. Large scale hydrological modelling to improve water resources assessment and prediction	F3. Modelling for surveillance and eradication of invasive species	DORS 2015 D3. Systems analysis and modelling to support capability development	L12. Shared vision modeling for actual decisions in water resources management	ASOR 2015 J1. Industrial sustainability
Total variation method for computed tomography using filtered back-projections <i>Jin, Q.</i>	Performance of OpenCL implementation of AWRA <i>Collins, D. and Penton, D.J.</i>	CLIMEX Version 4: New tools for visualizing the dynamic nature of climate suitability <i>Kriticos, D.J., Maywald, G.F., Yonow, T., Zurcher, E., Hermann, N. and Sutherst, R.W.</i>	Building and using an experimental Hadoop cluster <i>Surendran, T.J., McAteer, S., Beck, J.D., Ashman, R. and Joseph, A.</i>	The Bureau's operational Australian Water Resources Assessment Modelling System (AWRAMS): from science to end users applications and future directions <i>Hafeez, M., Smith, A., Frost, A., Srikanthan, R., Barua, S. and Elmahdi, A.</i>	Lattice gas model for company profit: cooperative relation between contractors and subcontractors <i>Morishita, A., Tateoka, Y. and Tainaka, K.</i>
	Why do sub-period consistency calibrations outperform traditional optimisations in streamflow prediction? <i>Kim, S.S.H., Hughes, J.D., Dutta, D. and Vaze, J.</i>	Risk mapping as a valuable tool for surveillance and eradication of invasive species <i>Murray, J.V. and van Klinken, R.</i>	Defining and developing soft capabilities within defence <i>Young, L.D.</i>	Application of Anuga as a 2D surface irrigation model <i>Morris, M., Githui, F. and Hussain, A.</i>	<b>Stream J. ASOR – Operations research</b> <b>Ren Potts Medal and Rising Star Award presentations and keynote talk</b>
	AWRA-L: global sensitivity analysis to guide future model development and parameterisation <i>Peeters, L.J.M., Pickett, T., Crosbie, R.S. and Vaze, J.</i>			Improved simulation of groundwater in river operations simulations: seamless integration of MODSIM and MODFLOW <i>Morway, E.D., Niswonger, R.G., White, J.T., Triana, E. and Kitlsten, W.</i>	
Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
B7. Modelling physio-chemical processes in lake and estuarine systems	L2. Large scale hydrological modelling to improve water resources assessment and prediction	F3. Modelling for surveillance and eradication of invasive species	DORS 2015 D4. Organisational, management and behavioural sciences	K5. Smart research: The use of mobile technology in participatory research & K7. The many roles of scenario modelling to achieve innovation and impact	ASOR 2015 J9. Energy and infrastructure
A model of oxygen and nitrogen biogeochemical response to hydrodynamic regimes in the Yarra River estuary <i>Bruce, L.C., Cook, P.L.M. and Hipsey, M.R.</i>	A holistic approach to rainfall estimation for operational water management <i>Wright, A., Li, Y., Grimaldi, S., Pauwels, V.R.N. and Walker, J.P.</i>	<b>Invited paper:</b> Quarantine and surveillance strategies for plant pathogen detection and control <i>Baxter, P.W.J., Parnell, S. and Hamilton, G.</i>	Exploring the intrinsic dimensionality of survey responses <i>Ali, I., Ivancevic, V., Macleod, I. and Yue, Y.</i>	Sustainable living internet technical library <i>Howden, P.</i>	Optimal control of electrical and thermal energy storage to minimise time-of-use electricity costs <i>Ciocco, L.R., Boland, J., Belusko, M., Bruno, F. and Pudney, P.</i>
Thermal change and heat budget in shallow and small, urban lakes <i>Chen, Q., Parshotam, A., Hicks, B. and Hamilton, D.</i>	Building an agro-hydrologic model of Europe: model calibration issues <i>Abbaspour, K.C., Rouholahnejad, E., Vaghefi, S., Srinivasan, R., Yang, H. and Kløve, B.</i>	Using dynamic spatial simulation modelling to help keep the skeleton in the closet <i>Renton, M. and Savage, D.</i>	A resilience approach to Defence critical infrastructure <i>Fleming, C.</i>	Whale tracking for everyone – using a smart phone application for citizen science <i>Meynecke, J.O.</i>	Sensitivity analysis of gas supply models for South-Eastern Australia <i>Schreider, S. and Plummer, J.</i>

## Monday 30 November

	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	A4. Modelling of bushfire dynamics, fire weather, impact and risk	C7. Maritime and aerospace unmanned vehicles modelling and simulation	B1. New challenges for agricultural systems modelling and software	E3. Technology and innovation	B4. Agricultural systems		
16:40	Modeling Australia's fire seasonality <i>McRae, R. and Featherston, G.</i>	<b>Stream C. Computer science and engineering</b> <b>KEYNOTE:</b> <b>We of the meta meta: is Australia developing a transparent and reproducible approach to transparency and reproducibility?</b> <i>Car, N.</i>	Automated satellite-based estimation of crop water requirement for irrigated horticultural industries in Northern Victoria <i>Weeks, A.L., Beverly, C., Whitfield, D., Abuzar, M. and McInnes, J.</i>	The operationalization and applications of the concept of 'sustainability' in the accounting and finance <i>Foo, D.A.C.</i>	Extending 'SafeGauge for Nutrients' to rainfed dairy systems in Victoria, Australia <i>Thayalakumaran, T., Barlow, K. and Moody, P.</i>		
17:00	Assessing mitigation of the risk from extreme wildfires using MODIS hotspot data <i>McRae, R. and Sharples, J.J.</i>		An evaluation of POAMA and APSIM based soil water outlooks for winter wheat <i>Western, A.W., Dassanayake, K.B., Perera, K.C., Alves, O., Young, G. and Argent, R.M.</i>	Technological innovation of China's pharmaceutical industry <i>Hong, J., Deng, P., Marinova, D. and Guo, X.</i>	Transformation of the BeefSpecs fat calculator: Addressing eating quality and production efficiency with on-farm decision making <i>Walmsley, B.J., Oddy, V.H., Gudex, B.W., Mayer, D.G. and McPhee, M.J.</i>		
17:20		CFD Modelling and real-time testing of the Wave Surface Glider (WSG) Robot <i>Salari, M.R. and Anvar, A.M.</i>		An empirical study on China's regional innovation network co-evolution state from self-organization perspective <i>Hong, J., Deng, P., Marinova, D. and Guo, X.</i>			
17:40		Design and simulation of new versions of tube launched UAV <i>Zhou, Y. and Anvar, A.M.</i>					
18:00	ASOR AGM	Central Room C					

## Monday 30 November

Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
B7. Modelling physio-chemical processes in lake and estuarine systems	L2. Large scale hydrological modelling to improve water resources assessment and prediction	F3. Modelling for surveillance and eradication of invasive species	DORS 2015 D4. Organisational, management and behavioural sciences	K5. Smart research: The use of mobile technology in participatory research & K7. The many roles of scenario modelling to achieve innovation and impact	ASOR 2015 J9. Energy and infrastructure
Modelling the effects of cracking of lake sediments during drying on acid generation and acid transport to the water column upon rewetting <i>Cook, F.J. and Mosley, L.M.</i>	Long-term trends in the annual groundwater recharge estimates using the water table fluctuation method <i>Shi, X., Crosbie, R.S. and Vaze, J.</i>	A general model to simulate how an invading organism's dispersal characteristics influence its spread, and the implications for surveillance strategies <i>Triska, M.D. and Renton, M.</i>	Building a Model and Theory of Joint <i>Hobbs, W., Lowe, D., McKay, T. and Neville, T.</i>	Opening SESAMME: An iPad-based application for developing socio-ecological models <i>Richards, R., Smith, C. and Setianto, N.</i>	Modelling of household electricity demand when using home batteries <i>Grozev, G., Ren, Z. and Higgins, A.</i>
Modelling of surface-ground water interactions in reflooded acid sulfate soil landscapes in the Lower River Murray following the Millennium Drought <i>Mosley, L.M., Fitzpatrick, R. and Cook, F.J.</i>	Estimation of natural groundwater recharge in Qatar using GIS <i>Baalousha, H.</i>	Incorporating wind-borne dispersal into biosecurity risk modelling <i>van Klinken, R.D., Durr, P. and Graham, K.</i>	Development of agreeable models for army intelligence, surveillance and reconnaissance in support of concept development <i>Pietsch, B., Curtis, N.J. and Coutts, A.</i>	Using scenarios describing cross-over points to explore uncertainty in comparison of environmental management alternatives <i>Guillaume, J.H.A., Arshad, M., Jakeman, A.J. and Kumm, M.</i>	Impacts of feed-in tariff and metering types on electricity consumption efficiency in Australia <i>Motlagh, O., Grozev, G. and Foliente, G.</i>
Predicting critical thresholds of aquaculture waste loading to coastal sediment <i>Paraska, D.W., Bruce, L.C., Shiell, G. and Hipsey, M.R.</i>	<b>Invited paper:</b> Large-scale regionalisation of the hydrological model AWRA-L for predicting impacts of coal resource development <i>Viney, N.R., Zhang, Y., Wang, B., Marvanek, S., Karim, F., Gilfedder, M., Aryal, S., Yang, A., Peeters, L., Crosbie, R. and Vaze, J.</i>	Continuing with agent based models to aid decision making in weed management. A case study of buffel grass; a weed dispersed by vehicular wind turbulence <i>Weiss, J. and Steel, J.</i>	Cyber – Concept to force development <i>Thakur, N.</i>	Using scenarios and a participatory approach to encourage model adoption in managing invasive species <i>Murray, J.V., Navarro Garcia, J., MacDonald, V., Marshall, D., Berman, D., Smith, C. and van Klinken, R.D.</i>	Minimizing discontinuities in electricity tariffs <i>Bahnisch, A. and Becker, K.H.</i>
A hydrodynamic-ecological model for Lake Rerewhakaaitu <i>Parshotam, A., Ozkundakci, D., McBride, C. and Hamilton, D.</i>	<b>L2: Discussion session</b>		Framing Analysis for Cyber within Joint Warfare <i>Ween, A., Dortmans, P. and Thakur, N.</i>	Applying an 'outcomes of interest' scenario framework to consider uncertainties impacting risk reduction policies <i>Riddell, G.A., van Delden, H., Maier, H.R. and Zecchin, A.C.</i>	Minimizing bushfire risk through optimal powerline assets replacement and improvement <i>Roozbahani, R., Huston, C., Dunstall, S., Abbasi, B., Ernst, A. and Schreider, S.</i>

## Tuesday 1 December

7:30	Registration and Information Desk	Ground Floor
8:30	Plenary	Dr Rob Vertessy FTSE How modelling propels environmental intelligence at the Bureau of Meteorology Arena 1B

	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	A4. Modelling of bushfire dynamics, fire weather, impact and risk	E1. Quantitative and computational finance	G2. Systems modelling for climate change assessments and management	G5. Non conventional data acquisition and modelling of hydrological extremes in data sparse environments (UNESCO, IFI, IDI)	K12. Data governance and management	F1. Modelling land use and ecosystem services	
9:15	Estimating grassland curing for wildlife danger assessment from satellite based microwave data <i>Chaivaranont, W., Evans, J.P., Liu, Y. and Sharples, J.J.</i>	Modelling the performance of positive P/E firms and negative P/E firms <i>Abidin, S., Ye, Y. and Zhao, Z.</i>	Integrated approach to the optimal sequencing of urban water supply augmentation options under climate change <i>Beh, E.H.Y., Dandy, G.C. and Maier, H.R.</i>	Drought assessment in the Pampanga River basin, the Philippines – Part 1: Characterizing a role of dams in historical droughts with standardized indices <i>Gusyev, M.A., Hasegawa, A., Magome, J., Kuribayashi, D., Sawano, H. and Lee, S.</i>	Data licensing in the Bioregional Assessment Programme <i>Allison, B., Moran, B., Slegers, S. and McNamara, J.</i>	Modelling hydrology and sediment transport in grass strips <i>Akram, S. and Yu, B.</i>	
9:35	Development of spatial models for bushfire occurrence in South-Eastern Australia <i>Zhang, Y., Lim, S. and Sharples, J.J.</i>	A Nonparametric Option Pricing Model Using Higher Moments <i>Cayton, P.J. and Ho, K-Y.</i>	Modelling the effect of sea level rise on tropical cyclone storm surge impact <i>Faivre, G., Ware, D. and Tomlinson, R.</i>	Drought assessment using tritium river water measurements for existing dam infrastructure in the Ishikari River basin, Japan <i>Gusyev, M.A., Morgenstern, U., Stewart, M., Yamazaki, Y., Kashiwaya, K., Kuribayashi, D., Sawano, H. and Iwami, Y.</i>	The death of documentation – the computer age <i>Hartcher, M.G.</i>	Modelling the effect of vegetation and soil on streamflow at a catchment scale <i>Almeida, A.C., Siggins, A., Smethurst, P.J., Baillie, C. and Worledge, D.</i>	
9:55	Models for lightning-caused bushfire ignition <i>Hearne, J., Read, N., Tanasescu, C. and Taylor, P.</i>	Agricultural commodities prices – fractional and integer differencing approach <i>David, S.A., Trevisan, L.R. and Quintino, D.D.</i>	A novel coupled biokinetic-equilibrium model to assess metal uptake and bioaccumulation by an estuarine filter-feeder <i>Lee, J.H., Birch, G.F. and Richards, R.G.</i>	A comparative SPI approach for qualifying historical and on-going droughts in the Pampanga River basin, the Philippines <i>Hasegawa, A., Gusyev, M., Magome, J. and Iwami, Y.</i>	A Data Governance framework for the Bioregional Assessment Programme <i>Hartcher, M.G.</i>	Modelling land use efficiency in supplying multiple ecosystem services <i>Bryan, B.A., Crossman, N.D., Nolan, M., Li, J., Navarro, J. and Connor, J.D.</i>	
10:15	Morning tea	Foyers A & B					
	A4. Modelling of bushfire dynamics, fire weather, impact and risk	E1. Quantitative and computational finance	G2. Systems modelling for climate change assessments and management	G5. Non conventional data acquisition and modelling of hydrological extremes in data sparse environments (UNESCO, IFI, IDI)	K12. Data governance and management	F1. Modelling land use and ecosystem services	
10:45	Invited paper: Measurement of topographic controls on the moisture content of surface fuels in south east Australian forests <i>Nyman, P., Baillie, C., Bovill, W., Lane, P., Tolhurst, K., Duff, T. and Sheridan, G.</i>	A state-space estimation of the Lee-Carter Mortality Model and implications for annuity pricing <i>Fung, M.C., Peters, G.W. and Shevchenko, P.V.</i>	Intelligent model to categorise mechanised water end uses <i>Nguyen, K.A., Stewart, R.A. and Zhang, H.</i>	Quantifying and managing the risk of hydrological extremes on seasonal to multi-decadal timescales <i>Kiem, A.S., Tozer, C. and Ho, M.</i>	Data management and publication at CSIRO <i>Hogan, D.</i>	Forecasting urban growth patterns: a non path-dependent modeling approach for spatial planning support <i>Doukari, O., Aguejidad, R. and Masson, V.</i>	

Tuesday 1 December

Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
F6. Modelling carbon and nutrient cycling in soil-plant systems	L2. Large scale hydrological modelling to improve water resources assessment and prediction	L1. Statistical and artificial intelligence methods in hydrology and water engineering	DORS 2015 D1. Mathematical modelling for defence applications	L4. Advances in rainfall and streamflow forecasts	ASOR 2015 J4. Transport, logistics and supply chains
Comparing drainage and $\text{NO}_3^-$ leaching using the APSIM and NZ-DNDC models <i>Giltrap, D.L., Vogeler, I. and Cichota, R.</i>	Variation of the Nash-Sutcliffe coefficient with sample frequency <i>Lesage, C., Vaze, J. and Post, D.</i>	Effects of climate indices on extreme rainfall in Queensland, Australia <i>Hossain, I., Rasel, H.M., Imteaz, M.A. and Pourakbar, S.</i>	Mathematical techniques to aid the Australian Army in selecting new defence vehicles <i>Albrecht, A.R., Belchamber, E.R.G., Bradford, E.V., Galapitige, A.H.N., Mills, S.J., Nguyen, T.T.T., Sargent, A.M., Ward, K., Ward, L.A. and Williams, P.B.</i>	Introducing the Bureau's new Generation Flood Forecasting System <i>Anderson, B., Robinson, J., Leahy, C., Quig, B., Enever, D., Pagano, T., Dodds, V. and Hackles, A.</i>	A whole of coal chain strategic planning model for the Hunter Valley <i>Boland, N., Ernst, A., Savelsbergh, M. and Waterer, H.</i>
Analysis of the spatiotemporal distribution of soil organic carbon <i>Kunkel, V., Hancock, G.R. and Wells, T.</i>	Soil Moisture and Runoff simulation Toolkit (SMART): A new framework for semi-distributed hydrologic modelling <i>Ajami, H., Khan, U., Tuteja, N.K. and Sharma, A.</i>	Statistical correlations between rainfall and climate indices in Western Australia <i>Hossain, I., Rasel, H.M., Imteaz, M.A. and Moniruzzaman, M.</i>	Constraint-based heuristics for amphibious embarkation planning <i>Chircop, P.A. and Surendonk, T.J.</i>	Ensemble seasonal streamflow forecasts for ephemeral rivers <i>Bennett, J.C., Wang, Q.J., Schepen, A., Robertson, D.E. and Li, M.</i>	A near optimal cane rail scheduler under limited and unlimited capacity constraints <i>Masoud, M., Kozan, E. and Kent, G.</i>
Modelling the effects of fertilizer management on crop productivity and nitrogen balance in the North China Plain <i>Li, X.X., Hu, C.S., Wang, E.L. and Xing, H.T.</i>	Streamflow assessment and uncertainty analysis for a midwest US watershed using the AgES-W model <i>Ascough II, J.C., Kipka, H., Lighthart, N.P., Green, T.R., David, O. and McMaster, G.S.</i>	Demonstration of max-stable models for estimating catchment flood risk <i>Le, P.D., Leonard, M. and Westra, S.</i>	Is the Contested Urban Networked Littoral Environment a step too far for Agent-Based-Modelling? <i>Johnson, W.T. and Ivancevic, V.G.</i>	Operational flow forecasting with a high resolution weather forecast NZCSM-TOPNET <i>Cattoën, C. and McMillan, H.</i>	Adaptive process of schedule recovery for airline operations <i>Chatrain, B. and Weber, V.</i>
Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
F6. Modelling carbon and nutrient cycling in soil-plant systems	L2. Large scale hydrological modelling to improve water resources assessment and prediction	L1. Statistical and artificial intelligence methods in hydrology and water engineering	DORS 2015 D1. Mathematical modelling for defence applications	L4. Advances in rainfall and streamflow forecasts	ASOR 2015 J4. Transport, logistics and supply chains
Litter decomposition under diverse environmental conditions: insights from isotope experiments <i>Luo, Z., Wang, E. and Verburg, K.</i>	Estimating the water and heat budget as an indicator for water resources management using an integrated watershed modeling tool <i>Tawara, Y., Hazart, A., Mori, K., Tada, K., Takeshima, J., Nishiyama, S., Al-Hanbali, A. and Tosaka, H.</i>	Impact of climate variability on rainwater savings: A case study for Sydney <i>Moniruzzaman, M. and Imteaz, M.A.</i>	Bobbing up and down like this: weather data as a predictor of patrol boat hull strain measurements <i>Kelleher, K. and McAteer, S.G.</i>	Improved reliability of dynamical seasonal rainfall forecasts using a lagged ensemble <i>Charles, A.</i>	Optimal design of inventory management systems for micro-warehousing in the healthcare industry <i>Guo, B., García-Flores, R. and Ayre, M.</i>

## Tuesday 1 December

	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	A4. Modelling of bushfire dynamics, fire weather, impact and risk	E1. Quantitative and computational finance	G2. Systems modelling for climate change assessments and management	G5. Non conventional data acquisition and modelling of hydrological extremes in data sparse environments (UNESCO, IFI, IDI)	K12. Data governance and management & K6. Modelling human decision-making situated in socio-ecological system models of land-use transitions	F1. Modelling land use and ecosystem services	
11:05	Effectiveness of automated fuelsticks for predicting the moisture content of dead fuels in <i>Eucalyptus</i> forests <i>Bovill, W., Hawthorne, S., Radic, J., Baillie, C., Ashton, A., Noske, P., Lane, P. and Sheridan, G.</i>	The GJR-GARCH and EGARCH option pricing models which incorporate the Piterbarg methodology <i>Labuschagne, C.C.A. and von Boetticher, S.T.</i>	Using marine models to road-test climate-smart management responses and strategies and prepare decision makers <i>Plagányi, E.E. and Hobday, A.J.</i>	Simulating design rainfall extremes in locations with limited observational records <i>Libertino, A., Sharma, A. and Marshall, L.</i>	An open data journal as a solution to the data curation and availability challenge in agricultural and environmental sciences <i>Janssen, S., Franke, J., Athanasiadis, I., Porter, C., Holzworth, D., Huyghe, C., Hologne, O. and Devare, M.</i>	Predicting response of state-wide stream condition to changes in land-use across Victoria to prioritise restoration effort <i>Johnson, M., Hodgson, L., Graszekiewicz, Z., Garland, C. and Sardina, P.</i>	
11:25	Modelling water quality risk in wildfire-prone catchments <i>Langhans, C., Smith, H.G., Chong, D.M., Nyman, P., Lane, P.N. and Sheridan, G.J.</i>	Variable Annuity with GMWB: surrender or not, that is the question <i>Luo, X. and Shevchenko, P.V.</i>	Australian potential for PRO-assisted desalination <i>Ribeiro, L., Helfer, F., Lemckert, C. and Sahin, O.</i>	River discharge simulation of a distributed hydrological model on global scale for the hazard quantification <i>Magome, J., Gusyev, M.A., Hasegawa, A. and Takeuchi, K.</i>	Demonstrating transparency: guidelines and processes to facilitate best-practice data citation <i>Merrin, L.E., Gallant, S.N., Schmidt, R.K., Car, N.J. and Hartcher, M.G.</i>	<b>Invited paper:</b> An integrated model of land-use trade-offs and expanding agricultural processing centres <i>Nazari, A., Penazzi, S., Ernst, A.T., Dunstall, S., Bryan, B., Connor, J. and Nolan, M.</i>	
11:45	Modelling overland flow on burned hillslopes using the KINEROS2 model <i>Kasmaei, L.P., Van Der Sant, R., Lane, P.J. and Sheridan, G.</i>	Using a Bayesian approach to evaluate the accuracy of economies of scope: Examples from Australian public universities <i>Zhang, L.-C., Syu, J.-J. and Worthington, A.C.</i>	A spatially-explicit integrated source-fate-effects model for sedimentary metals in Sydney estuary and catchment (Australia) <i>Richards, R., Birch, G., Lee, J. and Xiao, Z.</i>	Agricultural flood and drought risk reduction by a proposed multi-purpose dam: A case study of the Malwathoya River Basin, Sri Lanka <i>Navarathinam, K., Gusyev, M.A., Hasegawa, A., Magome, J. and Takeuchi, K.</i>	A National Environmental Information Infrastructure <i>Zerger, A., Horswell, R., Woolf, A., Percival, D. and Millard, J.</i>	Modelling biodiversity benefits and opportunity costs of timber harvesting: a case study of <i>Pinus radiata</i> <i>Nghiem, N.</i>	
12:05	Inter-comparison of land surface model soil moisture data with traditional soil dryness indices <i>Dharssi, I. and Vinodkumar</i>		A modelling framework for assessing water conservation potentials through demand-based tariff structures from societal and economic perspectives <i>Sahin, O., Beal, C., Khan, S., Kersting, A. and Dewe, J.</i>	Flood and drought assessment with dam infrastructure: A case study of the Ba River basin, Fiji <i>Nawai, J., Gusyev, M.A., Hasegawa, A. and Takeuchi, K.</i>	Simulating agricultural land-use adaptation decisions under changing climate using multi-agent system model in the Upper East Region of Ghana <i>Amadou, M.L. and Villamor, G.B.</i>		
12:25	Effects of post-fire vegetation regrowth on wind fields over complex terrain <i>Quill, R., Sharples, J.J. and Sidhu, L.A.</i>		A comparative analysis of engineering options for adaptation to sea-level rise: a case study for a vulnerable beach in Shoalhaven NSW <i>Tonmoy, F.N., Brown, M., Polydoropoulos, P. and El-Zein, A.</i>	Flood and drought hazard reduction by proposed dams and a retarding basin: A case study of the Upper Ewaso Ng'iro North River basin, Kenya <i>Odhiambo, C.O., Gusyev, M.A., Magome, J., Hasegawa, A. and Takeuchi, K.</i>	Incorporating gender specific land-use decisions in agent-based land use models <i>Villamor, G.B. and van Noordwijk, M.</i>		



## Tuesday 1 December

Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
F6. Modelling carbon and nutrient cycling in soil-plant systems & F7. Communicating model uncertainty	L2. Large scale hydrological modelling to improve water resources assessment and prediction	L1. Statistical and artificial intelligence methods in hydrology and water engineering	DORS 2015 D1. Mathematical modelling for defence applications	L4. Advances in rainfall and streamflow forecasts	ASOR 2015 J4. Transport, logistics and supply chains
The effect of soil organic carbon on wheat: Quantifying the relative effects of nitrogen and water supply <i>Palmer, J., Thorburn, P., Biggs, J., Probert, M., Huth, N. and Larsen, J.</i>	Evaluating water balance storage and flux estimates from the operational Australian Water Resource Assessment Landscape Model at a catchment scale <i>Pipunic, R.C., Smith, A.B. and Hafeez, M.</i>	A comparison between single and combined climate predictors successes on predicting South Australian spring rainfall <i>Rasel, H.M., Imteaz, M.A. and Mekanik, F.</i>	A stochastic scheduling approach for maintaining capability interdependencies and Defence program investment <i>Nguyen, M.-T. and Taylor, R.</i>	Seamless hourly rainfall ensemble forecasts <i>Cooper, S. and Seed, A.</i>	Neighbour hospitals collaboration in blood supply enhancement <i>Abbasi, B.</i>
Modelling nitrous oxide emissions from grains and sugarcane cropping systems: Generation and mitigation of emissions <i>Thorburn, P.J., Mielenz, H. and Biggs, J.S.</i>	Comparison of modelled groundwater recharge – Australian Water Resources Assessment Model versus BioSim <i>Wethasinghe, C., Ramchurn, A., Ha, J., Showers, C. and Carrara, E.</i>	Comparative study between linear and non-linear modelling techniques in rainfall forecasting for South Australia <i>Rasel, H.M., Imteaz, M.A., Hossain, I. and Mekanik, F.</i>	Algorithmic complexity of two defence budget problems <i>Taylor, R.</i>	An alternative to the Brier Score for probabilistic forecast verification <i>Kang, T.H., Sharma, A. and Marshall, L.</i>	The Many-Visits-Few-Cities Travelling Salesman Problem on Threshold Graphs <i>Becker, K.H. and Peron, M.</i>
Intercomparison of soil organic matter dynamics models across land uses <i>Wårdlind, D., Wang, E., Farquharson, R. and Moore, A.D.</i>	Evaluation of AWRA-L: the Australian Water Resource Assessment model <i>Frost, A.J., Ramchurn, A., Hafeez, M., Zhao, F., Haverd, V., Beringer, J. and Briggs, P.</i>		Optimisation model for defence investment planning – a goal programming approach <i>Wang, Y.J.</i>	A model-based approach to the computation of area probabilities for precipitation exceeding a certain threshold <i>Kriesche, B., Koubek, A., Pawlas, Z., Beneš, V., Hess, R. and Schmidt, V.</i>	Exploring the effects of mixed request schemes for demand-responsive feeder services <i>Kelly, R., Ronald, N., Wallace, M. and Winter, S.</i>
Potential errors in estimating daily N <sub>2</sub> O emission caused by measurement time and frequency <i>Xing, H., Wang, E., Smith, C.J., Zhang, Y., Macdonald, B.C.T., Zheng, H., Denmead, O.T. and Zhang, H.</i>	Skill assessment of a suite of catchment, estuarine and coastal models of the Southeast Queensland Region <i>Holmes, R., Barry, M., Botelho, D., Gilbert, F., Kidd, L., Udy, D., Vos, C. and Weber, T.</i>		<b>Stream D. DORS – Defence and homeland security modelling</b> <b>KEYNOTE:</b> <b>Data farming: what it is, and why you need it!</b> <i>Sanchez, S.M.</i>	Value of ensemble merging for seasonal streamflow forecasts <i>Lerat, J., Schepen, A., Laugesen, R., Khan, U., Pickett-Heaps, C., Shin, D. and Wang, Q.J.</i>	Routing field service officers with SIMULINK <i>Ng, Y.V. and Monks, I.R.</i>
Thoughts on spatio-temporal uncertainty metrics motivated by input sensitivity in the Spark bushfire spread model <i>Huston, C., Miller, C., Hilton, J., Woolard, F. and Campbell, E.</i>	<b>L2: Closing remarks and open discussion</b>			Multiple lead-time streamflow forecasts by a staged error modelling approach <i>Li, M., Wang, Q.J., Bennett, J. and Robertson, D.E.</i>	Rail simulation for complex yard operations <i>Corry, P.G.</i>

## Tuesday 1 December

12:45	Lunch	Foyers A & B				
13:45	Plenary	Arena 1B	Dr Christina Burt Hybrid approaches for challenging scheduling problems in open pit mining			
	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5
	A4. Modelling of bushfire dynamics, fire weather, impact and risk	C3. Virtual platforms for science and engineering education & C8. Web services	B2. Advances in agent-based modelling of complex biological, ecological and agricultural systems	G5. Non conventional data acquisition and modelling of hydrological extremes in data sparse environments (UNESCO, IFI, IDI)	K11. Achieving impact through co-designing science with stakeholders	G3. Detecting and attributing change in natural hazards
14:30	Modelling dynamic bushfire spread: perspectives from the theory of curvature flow <i>Wheeler, V.-M., Wheeler, G.E., McCoy, J.A. and Sharples, J.J.</i>	Pilot study on an online transition course in mathematics <i>Berres, S., Rehberg, S. and Colipe, E.</i>	Decoupling energy and natural resource use from economic growth: an agent-based modelling approach <i>Gonzalez, J., Gordon, I.J., Polhill, G., Dawson, T. and Hill, R.</i>	A stochastic modeling framework for the Invitational Drought Tournament <i>Strickert, G., Nazemi, A. and Bradford, L.E.</i>	Stream K. Participatory decision making and modelling social systems  KEYNOTE: What core integrated modelling skills should we teach future environmental planners, managers and decision makers? <i>Kragt, M.E.</i>	Assessing the role of electricity networks in bushfire ignitions: estimation of current and prospective performance <i>Huston, C., Dunstall, S., Towns, G., Stephenson, A., Woodman, S. and Hunt, A.</i>
14:50	Pyrogenic vorticity from windward and lee slope fires <i>Sharples, J.J., Kiss, A.E., Raposo, J., Viegas, D.X. and Simpson, C.C.</i>	Reactive documents for modelling and simulation <i>Denehy, G.D.</i>	Spatiotemporal agent-based modelling to analyze sustainability issues at the landscape level – the grazing herbivores metaphor <i>Guerrin, F.</i>	Constructing damages functions for paddy field hit by water-related disasters based on MODIS FPAR and a distributed hydrological model in data sparse context: the example of Solo river basin, Indonesia <i>Sugiura, A., Kudo, S., Gusyev, M. and Yorozuya, A.</i>		Statistical modelling of extreme ocean climate with incorporation of storm clustering <i>Jiang, W., Davies, G., Callaghan, D.P., Baldock, T. and Nichol, S.</i>
15:10	A rate of spread index for fires in spinifex fuels <i>Sharples, J.J., Gill, A.M. and Burrows, N.D.</i>	A simulation system with educational applications that may be used on smart phones <i>Namekawa, M., Yoshizumi, T., Sumida, T., Shiono, Y., Tsuchida, K. and Satoh, A.</i>		Invited paper: Integrated approach of inundation analysis using hydrological observation and hydraulic analysis in data sparse basins <i>Yorozuya, A., Kudo, S., Koseki, H. and Iwami, Y.</i>	Working with practitioners: how scientists can develop effective relationships that produce an enduring legacy <i>Goggin, C.L., Grieve, A.M., Summerell, G., Leys, J., Barrett, T., Oliver, I., Waters, S., Littleboy, M., Auld, T.D., Drielsma, M. and Jenkins, B.</i>	Past and future trends in Australian floods: what are the causes? <i>Johnson, F., White, C.J., Van Dijk, A.I.J.M., Ekstrom, M., Evans, J., Jakob, D., Kiem, A.S., Leonard, M., Rouillard, A. and Westra, S.</i>
15:30	Afternoon tea	Foyers A & B				
	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5
	F12. Unmanned aerial systems for environment and ecology	C3. Virtual platforms for science and engineering education & C8. Web services	B2. Advances in agent-based modelling of complex biological, ecological and agricultural systems	B6. Mathematical modelling and image analysis for plant phenotyping	K11. Achieving impact through co-designing science with stakeholders	G3. Detecting and attributing change in natural hazards
16:00	Fine-tuning of unmanned aerial surveillance for ecological systems <i>Baxter, P.W.J. and Hamilton, G.</i>	The Keyword Aggregator web service— a tool and methodology for managing digital objects' keywords <i>Benn, D., Car, N.J., Yu, J. and Cox, S.J.D.</i>	Making the most of secure water: a framework to aid decision making <i>Shahpari, S., Allison, J., Stanley, R.A. and Harrison, M.T.</i>	Modelling the dynamics of Vernalization: The role of conceptualization in model formulation <i>Anderssen, R.S., Finnegan, E.J., Helliwell, C.A. and Robertson, M.</i>	Exploring the networks of government scientists using Social Network Analysis: a scoping study <i>Goggin, C.L., Cunningham, R., Summerell, G., Leys, J., Auld, T.D., Oliver, I., Barrett, T. and Littleboy, M.</i>	Detecting and attributing changes to Australian drought over the past 2000 years <i>Kiem, A.S., Vance, T.R., Roberts, J.L., Curran, M.A.J., Tozer, C., Ho, M. and Flack, A.</i>

Tuesday 1 December

Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
F9. Prediction of estuarine process regime changes under system instability or evolutionary progression	L11. Applications of remote sensing in hydrological and biophysical model calibration and prediction	L7. Innovations in water engineering: The role of data-based techniques	K8. Decision making in complex systems: The role of values, cognition, emotions, and behaviours	L4. Advances in rainfall and streamflow forecasts	ASOR 2015 J4. Transport, logistics and supply chains
Impact of meadow size and morphology characteristics on bistability in seagrass ecosystems <i>Adams, M.P., Ghisalberti, M., Lowe, R.J., Hipsey, M., Bruce, L.C., Hovey, R., Gruber, R.K., Ruiz-Montoya, L., Maxwell, P.S., Callaghan, D.P., Kendrick, G.A. and O'Brien, K.R.</i>	Evaluation of remotely sensed evapotranspiration products in a large scale Australian arid region: Cooper Creek, Queensland <i>Mohammadi, A., Costelloe, J.F. and Ryu, D.</i>	A framework for attributing the uncertainty in hydrologic model simulations to different sources <i>Abu Shoaib, S., Marshall, L. and Sharma, A.</i>	Understanding the challenges of decision-analytic interventions in organizations – a practice-based approach <i>Becker, K.H., Montibeller, G. and Barcus, A.</i>	Projection in Hilbert Space for flood forecasting <i>Mohssen, M.</i>	Integer Programming Formulations for the Uncapacitated Vehicle Routing p-Hub Center Problem <i>Kartal, Z. and Ernst, A.T.</i>
Indicators of changing connectivity within estuarine and coastal systems <i>Condie, S.A., Herzfeld, M., Hock, K., Andrewartha, J.R., Gorton, R., Brinkman, R. and Schultz, M.</i>	Verifying temperature lapse rates in the Eastern Himalayas using Landsat 7 and 8 <i>Penton, D.J., Neumann, L.E., Karki, R. and Nepal, S.</i>	Improved spatial interpolation of rainfall using Genetic Programming <i>Adhikary, S.K., Yilmaz, A.G. and Muttil, N.</i>	Using mathematical modelling to tackle a wicked problem: the energy poverty trap <i>Curran, F., O'Brien, K.R., Herrington, M., Pascale, A., Adams, M.P., Smart, S., Greig, C. and Lant, P.A.</i>	Roles of expertise and automation in operational river forecasting <i>Pagano, T.C., Anderson, B., Pappenberger, F., Wood, A.W., Ramos, M.-H., Mannes, A.E. and Persson, A.</i>	A route integration approach to determine marginal costs in road freight transport <i>Braun, H.</i>
An attractor modelling approach to predicting system stability in barrier estuaries <i>McLean, E.J. and Hinwood, J.B.</i>	Towards reliable hydrological model calibrations with river level measurements <i>Jian, J., Ryu, D., Costelloe, J.F. and Su, C.-H.</i>	Toward auto-simplification of rainfall-runoff and groundwater models <i>Bardsley, W.E. and Vetrova, V.V.</i>	Modeling the adoption of energy efficient retrofits by mid-tier commercial buildings <i>Marquez, L., McGregor, J., Seo, S., Walton, A., Moglia, M., Higgins, A. and Gardner, J.</i>	A strategy for quality controlling hourly rainfall observations and its impact on hourly streamflow simulations <i>Robertson, D.E., Bennett, J.C. and Wang, Q.J.</i>	Assessing direct economic impacts of disruptions in transport networks <i>Hasan, S., Foliente, G. and Higgins, A.</i>
Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
F9. Prediction of estuarine process regime changes under system instability or evolutionary progression	L11. Applications of remote sensing in hydrological and biophysical model calibration and prediction	L7. Innovations in water engineering: The role of data-based techniques	K8. Decision making in complex systems: The role of values, cognition, emotions, and behaviours	L4. Advances in rainfall and streamflow forecasts	ASOR 2015 J4. Transport, logistics and supply chains & J7. Simulation and optimisation case studies
Wave parameter classification based on morphological changes around a small wave-dominated tidal-inlet using a schematized Delft3D model <i>Shaeri, S., Nguyen, A.H. and Strauss, D.</i>	Blending NPP-VIIRS and Landsat OLI images for flood inundation monitoring <i>Huang, C., Chen, Y., Zhang, S.Q., Liu, R., Shi, K.F., Li, L.Y. and Wu, J.P.</i>	Simulation of daily rainfall across a range of space and time scales <i>Bennett, B.S., Leonard, M., Thyer, M. and Lambert, M.</i>	Behavioural issues in environmental modelling – the missing perspective <i>Hämäläinen, R.P.</i>	Comparison of Level 3 mean monthly GPROF products from GPM and TRMM microwave imager in estimating seasonal precipitation <i>Shi, K., Chen, Y. and Wu, J.</i>	Discrete flow pooling problems in coal supply chains <i>Boland, N., Kalinowski, T. and Rigtterink, F.</i>

## Tuesday 1 December

	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5
	F12. Unmanned aerial systems for environment and ecology	C3. Virtual platforms for science and engineering education & C8. Web services	B2. Advances in agent-based modelling of complex biological, ecological and agricultural systems	B6. Mathematical modelling and image analysis for plant phenotyping	K11. Achieving impact through co-designing science with stakeholders	G3. Detecting and attributing change in natural hazards
16:20	The potential of unmanned aerial vehicles for providing information on vegetation health <i>McCabe, M.F., Houborg, R. and Rosas, J.</i>	PID Service – an advanced persistent identifier management service for the Semantic Web <i>Gologoniuc, P., Car, N.J., Cox, S.J.D. and Atkinson, R.A.</i>	Toward a new approach for plant modelling <i>Soulié, J.-C., Luquet, D. and Michel, F.</i>	High throughput root phenotyping for cereal plants using spatial distribution in polar coordinate system <i>Cai, J., Nguyen, V.L., Wheal, M., Stangoulis, J. and Miklavcic, S.</i>	Role of modelling and simulation in evidence-informed policy making: the case of impact assessment <i>Janssen, S., Jacob, K., Jansen, J. and Guske, A-L.</i>	Understanding and managing drought in Australia – What do we know? What do we need to know? <i>Kiem, A.S., Johnson, F., Westra, S., Evans, J.P., Jakob, D., van Dijk, A.I.J.M., Barr, C., O'Donnell, A., Batelaan, O., Perkins, S., Mehrotra, R., Sivakumar, B., Thyer, M., Tyler, J. and Woldemeskel, F.</i>
16:40	Automated detection and segmentation of vine rows using high resolution UAS imagery in a commercial vineyard <i>Nolan, A.P., Park, S., O'Connell, M., Fuentes, S., Ryu, D. and Chung, H.</i>	A review of the eReefs project: its goals, products and place within the Australian interoperable data project landscape <i>Hodge, J. and Car, N.J.</i>	Macroscopic analysis of agent-based models using equation-free methods <i>Thomas, S.A, Lloyd, D. and Skeldon, A.</i>	Gaussian Mixture Models for image-based cereal plant canopy analysis <i>Laga, H., Kumar, P, Cai, J., Haefele, S., Anbalagan, R., Kovalchuk, N. and Micklavcic, S.J.</i>	Practicing and evaluating outcomes of working across the science policy interface <i>Matthews, K.B., Miller, D.G. and Wardell-Johnson, D.</i>	Natural hazards in Australia: heatwaves <i>Perkins, S.E., White, C.J., Alexander, L.V., Argüeso, D., Boschat, G., Cowan, T., Evans, J.P., Ekström, M., Oliver, E.C.J., Phatak, A. and Purich, A.</i>
17:00	Estimation of crop water stress in a nectarine orchard using high-resolution imagery from unmanned aerial vehicle (UAV) <i>Park, S., Nolan, A., Ryu, D., Fuentes, S., Hernandez, E., Chung, H. and O'Connell, M.</i>	Performance characteristics of Source calibration service <i>Singh, R.M., Taylor, L., Penton, D., Stenson, M., Podger, G. and Brown, A.</i>	RF-MAS: Including inter-annual variability in the Cost Benefit Analysis of an investment in irrigation <i>Vogeler, I., Smale, P., Beautrais, J., Mackay, A. and Kaye-Blake, B.</i>	Growth measurement of Arabidopsis in 2.5D from a high throughput phenotyping platform <i>Li, X., Zaragoza, J., Kuffner, P., Ansell, P., Nguyen, C., Daily, H., Furbank, R. and Sirault, X.</i>	Building resilience in New Zealand farming communities through collaborative research <i>Small, B., Payne, T. and Montes de Oca, O.</i>	<b>Stream G. Global change and natural hazards</b> <b>KEYNOTE:</b> <b>Can models be used to determine if the hydrologic cycle is intensifying?</b> <i>Sheffield, J.</i>
17:20	<b>Invited paper:</b> Assessment of crop insect damage using unmanned aerial systems: A machine learning approach <i>Puig, E., Gonzalez, F., Hamilton, G. and Grundy, P.</i>	Tools for enabling rapid deployment of water and energy consumption and supply data services <i>Yu, J., Leighton, B., Mirza, F. and Singh, R.</i>	Spatially explicit individual-based modelling of insect-plant interactions: effects of level of detail in Queensland fruit fly models <i>Wang, M., Cribb, B., Auzmendi, I. and Hanan, J.</i>		Customer-focused science for environmental sustainability: a continuing case study from the NSW Government <i>Summerell, G., Leys, J., Booth, S., Oliver, I., Wilson, K., Littleboy, M. and Jenkins, B.</i>	
17:40	Evaluating the effectiveness of UAVs for pest management <i>Weiss, J., Clements, D., Dugdale, T., Hamilton, G., Gonzalez, F., Hauser, C. and McCornack, B.</i>				Considering a framework to estimate the impact of co-designed science: Case study of Bayesian networks to set NRM targets <i>Ticehurst, J.L., Elsworth, S. and Richardson, L.</i>	
18:00	MSSANZ AGM	Meeting Room 5				
19:30	Session Organisers' Dinner					

## Tuesday 1 December

Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
F9. Prediction of estuarine process regime changes under system instability or evolutionary progression	L11. Applications of remote sensing in hydrological and biophysical model calibration and prediction	L7. Innovations in water engineering: The role of data-based techniques	K8. Decision making in complex systems: The role of values, cognition, emotions, and behaviours	L4. Advances in rainfall and streamflow forecasts	ASOR 2015 J4. Transport, logistics and supply chains & J7. Simulation and optimisation case studies
3D Hydrodynamics and Vertical Mixing in a Stratified Estuary <i>Jovanovic, D., Barnes, M.P., Teakle, I.A.L., Bruce, L.C. and McCarthy, D.T.</i>	<b>Invited paper:</b> Assessing irrigated agriculture's surface water and groundwater consumption by combining satellite remote sensing and hydrologic modelling <i>Peña-Arancibia, J.L., Mainuddin, M., Kirby, J.M., Chiew, F.H.S., McVicar, T.R. and Vaze, J.</i>	The role of evapotranspiration in the spatio-temporal variability of streamflow end-members in a humid catchment <i>Costelloe, J.F. and Western, A.W.</i>	Exploring social practices of peer-review in an agent-based simulation: The COST Action PEERE <i>Dignum, V. and Dignum, F.</i>	Evaluation and post-processing of the rainfall forecasts from NWP models for use in streamflow forecasting <i>Shrestha, D.L., Robertson, D., Bennett, J., Song, Y. and Wang, Q.J.</i>	Catchy catchments: estimating outflow of the Iponan watershed using Anylogic <i>Sempio, J., Marquez, L., Acosta, J., Decillos, J. and Lunas, T.</i>
	Identifying sources for systematic and random errors in microwave satellite soil moisture over Australia <i>Su, C.-H., Zhang, J., Gruber, A., Parinussa, R. and Ryu, D.</i>	Quantifying uncertainty of upper air climate variables in GCM atmospheric simulations for the future <i>Eghdamirad, S., Johnson, F. and Sharma, A.</i>	Why so slow? Mathematical modelling demonstrates how implicit bias can perpetuate low workforce diversity <i>O'Brien, K.R., Scheffer, M., van Nes, E.H. and van der Lee, R.</i>	A post-processing approach to improve rainfall and streamflow forecasts at a range of Australian sites <i>Thyer, M.A., McInerney, D.J., Kavetski, D., Kuczera, G.A., Shin, D., Lerat, J. and Tuteja, N.K.</i>	Support to Armed Reconnaissance Helicopter Tactics development using Constructive Simulation <i>Shokr, M., Tu, Z., Ibal, G. and Goss, T.</i>
	The impact of assimilation of streamflow and downscaled satellite soil moisture observations for hydrological forecasting <i>Lopez Lopez, P., Weerts, A.H., Schellekens, J., Sterk, G., Kockx, A.C., de Jeu, R. and Van Dijk, A.I.J.M.</i>	Classifying short-duration extreme rainfall events by triggering mechanism <i>Johnson, F. and Westra, S.</i>	A comparison of results between interactive and non-interactive forms of visualisation to improve learning. A case study of Te Waihora/Lake Ellesmere, Canterbury, New Zealand <i>Otinpong, B., Charters, S., McKinnon, A. and Gidlow, B.</i>	Dimension reduction techniques to improve multivariate hydroclimatic forecasting models <i>Vetrova, V.V. and Bardsley, W.E.</i>	ASPIRE to uncover the value in SME waste streams <i>Ayre, M., King, S. and Dunstall, S.</i>
	Land surface brightness temperature retrieved from Landsat data <i>Li, F., Jupp, D.L.B., Thankappan, M., Wang, L.-W., Sixsmith, J., Lewis, A. and Held, A.</i>	Time-series model calibrations – influence and estimation of different error types <i>Kim, S.S.H., Hughes, J.D., Dutta, D. and Vaze, J.</i>		Statistical techniques for water forecasting <i>Wang, Q.J., Robertson, D.E., Schepen, A., Li, M., Bennett, J., Shrestha, D.L. and Song, Y.</i>	A hybrid simulation model for preparedness <i>Jagiello, J. and Gowlett, P.</i>
	Towards LPRM-based soil moisture retrievals with multi-angular microwave observations from SMOS <i>Liu, S., Su, C.-H., Ryu, D. and Kim, K.</i>	Using Generalized Additive Model (GAM) to interpret catchment flow response processes <i>Kundu, D., van Ogtrop, F. and Vervoort, R.W.</i>			Using process simulation to demystify scheduling software – a case study <i>Wallace, B.B., Dhake, A., Shi, K. and Marshall, J.</i>

Wednesday 2 December

MODSIM Rest Day

Thursday 3 December

7:30	Registration and Information Desk	Ground Floor
8:30	Plenary	<b>Professor Howard Wheeler</b> Modelling hydrological extremes in a data sparse environment – experience from Western Canada <b>Arena 1B</b>

	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	A1. Industrial modelling and simulation		H1. Modelling data in health sciences	C2. Advances in neural networks, soft computing and machine learning in biological, environmental and social systems	E7. Modelling international business finance and financial markets in Asia	L7. Innovations in water engineering: The role of data-based techniques	
9:15	Investigating flame fronts in competitive exothermic reactions <i>Huang, Z., Sidhu, H.S., Towers, I.N., Jovanoski, Z. and Gubernov, V.V.</i>		The potential impact of pain on health outcomes among patients with chronic obstructive pulmonary disease <i>Bae, S., Jackson, B.E., Uhm, M., Bartolucci, A.A., Coultas, D., Russo, R., Peoples, J., Ashmore, J. and Singh, K.P.</i>	On the use of local and global search paradigms for computer-aided diagnosis of breast cancer <i>Abroudi, A., Shokouhifar, M. and Samarasinghe, S.</i>	Modelling the linkages between dividend policy and future earnings <i>Abidin, S., Wellalage, N. and Chowdhury, I.</i>	Bias correction of precipitation extremes conditioned on synoptic weather patterns <i>Li, J., Johnson, F., Sharma, A. and Evans, J.P.</i>	
9:35	Effects of climate, objective function and sample size on global sensitivity in a SWAT Model <i>Seo, L., Croke, B.F.W., van Griensven, A., Guillaume, J.H.A., Iwanaga, T. and Jakeman, A.J.</i>		Using the Bayesian Logistic Regression Model to determine the relationship of demographics and Hyperaldosteronism <i>Bartolucci, A.A., Singh, K.P. and Bae, S.</i>	A review of computational models of mammalian cell cycle <i>Abroudi, A., Samarasinghe, S. and Kulasiri, D.</i>	Forecast foreign exchange with both linear and non-linear models coupled with trading rules for selected currencies <i>Ling, J.Z., Tsui, A.K. and Zhang, Z.Y.</i>	Modelling input uncertainty in coupled hydrologic models via ABC <i>Marshall, L.</i>	
9:55	Texture-based identification of inert-maceral derived components in metallurgical coke <i>Li, R., Jenkins, D.R. and Pearce, R.</i>		Using Time Series Analysis to forecast future RACGP OSCE capacity <i>Buljan, M.</i>	Computational techniques in mathematical modelling of biological switches <i>Chong, K.H., Samarasinghe, S., Kulasiri, D. and Zheng, J.</i>	An empirical study of the impacts of geographic and cultural distance on Chinese ODI <i>Qi, J.H., Zhao, Y. and Zhang, Z.Y.</i>	Importance of a proper bias correction approach in hydrology and water resources related applications <i>Mehrotra, R. and Sharma, A.</i>	
10:15	Morning tea	Foyers A & B					
	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	A1. Industrial modelling and simulation	H2. Health Information Systems: challenges and solutions	K1. Improving society using the social web	C2. Advances in neural networks, soft computing and machine learning in biological, environmental and social systems	B3. Modelling to increase productivity and reduce environmental impact of farming systems	L8. Water planning and management: Issues, challenges, and solutions	
10:45	Invited paper: Filtration efficiency of bubble scrubbers <i>Braddock, R.D., Cropp, R.A. and Boskovic, L.</i>	Hospital Event Simulation Model: Arrivals to Discharge <i>Ben-Tovim, D., Filar, J., Hakendorf, P., Qin, S., Thompson, C. and Ward, D.</i>	Social media monitoring for health indicators <i>Robinson, B., Sparks, R., Power, R. and Cameron, M.</i>	System modelling of mammalian cell cycle regulation using multi-level hybrid petri nets <i>Abroudi, A. and Samarasinghe, S.</i>	Integrating biophysical and whole-farm economic modelling of agricultural climate change mitigation <i>Dumbrell, N.P., Kragt, M.E., Meier, E., Biggs, J. and Thorburn, P.J.</i>	Optimal water infrastructure planning under deep uncertainty: balancing robustness, flexibility and adaptability <i>Beh, E.H.Y., Maier, H.R. and Dandy, G.C.</i>	



Wednesday 2 December

Thursday 3 December

Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
F8. Squeezing the juice out of data – advanced data analysis techniques	K13. What should we be teaching the next generation? Identifying core modelling practices	L13. Climate impact on water and water resources adaptation		L16. Modelling water quality and treatment	ASOR 2015 J10. Advances in OR methods & J11. OR in the services economy
<b>Invited paper:</b> Extracting relationships from environmental data by means of partial information analysis <i>Li, X., Maier, H.R. and Zecchin, A.C.</i>	Modeling practice synthesis and key lessons learned across 20 years of model development: the ASRU experience <i>Ascough II, J.C. and Ahuja, L.R.</i>	<b>Invited paper:</b> Multiple sources of uncertainty in modelling future hydroclimate <i>Chiew, F.H.S., Teng, J., Potter, N.J., Ekstrom, M., Petheram, C., Zhang, L., Post, D.A. and Vaze, J.</i>		Model development for prediction of alum dosing for treatment of domestic wastewater for recycling purposes <i>Aslam, Z., van Leeuwen, J. and Crossing, N.</i>	A multi-level approach to planning and scheduling resources for aviation training <i>Johnstone, M., Le, V., Novak, A., Khan, B., Creighton, D., Tracey, L. and Nguyen, V.</i>
Assessment of light history indicators for predicting seagrass biomass <i>Adams, M.P., Ferguson, A.J.P., Collier, C.J., Baird, M.E., Gruber, R.K. and O'Brien, K.R.</i>	Communicating uncertainty: design patterns for framing model results in scientific publications <i>Guillaume, J.H.A., Elsworth, S., Jakeman, A.J. and Kumm, M.</i>	Hydrologic nonstationarity and modelling under change <i>Chiew, F.H.S., Vaze, J., Post, D.A. and Zhang, L.</i>		Modelling THM formation potential based on the character of organics – in catchments and drinking water sources <i>Awad, J., van Leeuwen, J., Chow, C., Drikas, M. and Smernik, R.J.</i>	A Hybrid Cross-Entropy and Progressive Hedging Matheuristic with application to a RAPS System <i>Ernst, A.T., Moore, T., Owens, B. and Singh, G.</i>
Data-based methods for temporal disaggregation of contaminant loads <i>Elliott, S., Booker, D., Wang, D. and Hicks, M.</i>		Disentangling climate change effects on Australian streamflow <i>Dolk, M.M., Vervoort, R.W. and van Ogtrop, F.F.</i>		A model for prediction of overtopping at berm breakwaters <i>Etemad-Shahidi, A. and Jafari, E.</i>	An Efficient Modified Greedy Algorithm for the P-Median Problem <i>Dzator, M. and Dzator, J.</i>
Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
F8. Squeezing the juice out of data – advanced data analysis techniques	F5. Spatio-temporal modelling for human and ecosystem health assessment	L13. Climate impact on water and water resources adaptation	E4. Modelling and financial management	L16. Modelling water quality and treatment	ASOR 2015 J2. Stochastic networks
Synthetic data comparison of Ensemble Empirical Mode Decomposition (EEMD) and Complete EEMD <i>Peel, M.C.</i>	Determination of physical–chemical conditions to predict macroinvertebrate communities in Machangara River (Southern Andes, in Ecuador) <i>Jerves-Cobo, R., Zhindon-Argoti, D., Iñiguez-Vela, X., Cordova-Vela, G., Diaz-Granda, C., Cisneros-Espinoza, F., Nopens, I. and Goethals, P.</i>	A statistical model for estimating future low flows <i>Potter, N.J.</i>	<b>Stream E. Economics and finance</b> <b>KEYNOTE:</b> <b>Evaluation of financial sustainability of the Japanese medical system: Analysis of the length of hospital stay for diabetes patients</b> <i>Nawata, K. and Kawabuchi, K.</i>	Assessment of water quality in Hawkesbury-Nepean River in Sydney using water quality index and multivariate analysis <i>Haque, M.M., Kader, F., Kuruppu, U. and Rahman, A.</i>	Does extra information harm or hinder? Probabilistic and state-dependent routing in networks with selfish routing <i>Ziedins, I.</i>

## Thursday 3 December

	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	A1. Industrial modelling and simulation	H2. Health Information Systems: challenges and solutions	K1. Improving society using the social web	C2. Advances in neural networks, soft computing and machine learning in biological, environmental and social systems	B3. Modelling to increase productivity and reduce environmental impact of farming systems	L8. Water planning and management: Issues, challenges, and solutions	
11:05	Effective method for locating facilities <i>Dzator, M. and Dzator, J.</i>	Optimization of patient scheduling in a hospital department <i>Erechtchoukova, M.G., Khaite, P.A., Connolly, B., Aziza, A., Khaite, D.P. and Bajaj, I.</i>	Using microblogging messages to detect emergency events in China <i>Robinson, B., Bai, H., Power, R. and Lin, X.</i>	Big data analytics for biosecurity: monitoring large area for salad leaf disease prevention <i>Dutta, R., Smith, D. and Mueller, H.</i>	Systemic adaptations to climate change in Western Australian mixed farm systems <i>Ghahramani, A., Moore, A.D., Crimp, S.J. and Bowran, D.</i>	Water consumption pattern in the traditional villas of Abu Dhabi <i>Chowdhury, R.K. and Rajput, M.A.</i>	
11:25	Linking crime to spatial distribution of urban variables using Geospatial Discriminative Patterns and Geographic Information System Models <i>Shariff, N.M. and Nor, W.A.W.M.</i>	Determining the optimal number of beds in the subacute section of a large hospital <i>García-Flores, R., Sparks, R., Munro, D. and McCubbin A.</i>	On the feasibility of answer suggestion for advice-seeking community questions about Government services <i>Wan, S. and Paris, C.</i>	Agricultural decision support using heterogeneous remote sensing guided machine learning <i>Dutta, R., Mueller, H., Das, A., Smith, D. and Aryal, J.</i>	Modelling the impact of climate variability and irrigation on winter canola yield and yield gap in Southwest China <i>He, D., Wang, J. and Wang, E.</i>	Allocating limited water: linking ecology and economics <i>Farquharson, R.J., Freebairn, J.W., Webb, J.A., Stewardson, M.J. and Ramilan, T.</i>	
11:45	Multi-objective optimization of thermal comfort and energy consumption in a typical office room using CFD and NSM-PSO <i>Li, N., Cheung, S.C.P., Li, X. and Tu, J.</i>	Developing an eBoard for resource management in the Image Guided Therapy Department <i>Khaite, P.A., Erechtchoukova, M.G., Connolly, B., Aziza, A., Ahmed, K.S., Khaite, D. and MacLellan, B.</i>	Tracking biosecurity events on Twitter: Challenges and lessons learned <i>Welvaert, M., Al-Ghattas, O., Cameron, M. and Caley, P.</i>	Estimation of leaf wetness duration using Adaptive Neuro-Fuzzy Inference Systems <i>Ghobakhlou, A., Amir, F., Whalley, J. and Sallis, P.</i>	Potential of increasing yield while mitigating climate change in Australian wheat systems: a simulation study <i>Luo, Z., Wang, E. and Smith, C.J.</i>	Valuing environmental water – lessons from a transdisciplinary ecological-economic study <i>Fu, B., Dyer, F., Scarpa, R., Kravchenko, A., Dyack, B. and Merritt, W.</i>	
12:05	A simple population model with a stochastic carrying capacity <i>Anderson, C., Jovanoski, Z., Towers, I.N. and Sidhu, H.S.</i>				Modelling productivity and water use efficiency of alternative cropping systems in the North China Plain <i>Qin, X., Zhao, Z., Wang, E., Wang, Z. and Zhou, S.</i>	Using decision support for water quality improvement planning: the CAPER DSS <i>Kelly, R.A.</i>	
12:25	Adopting Lean Six Sigma to AnyLogic Simulation in a manufacturing environment <i>Ahmed, A., Page, J. and Olsen, J.</i>				Evaluating wheat water footprints in the North China Plain <i>Shen, Y., Wu, X. and Luo, J.</i>	A plan for water quality improvement in the Tamar Estuary and Esk rivers <i>Kelly, R.A., Locatelli, A. and White, M.</i>	

## Thursday 3 December

Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
F8. Squeezing the juice out of data – advanced data analysis techniques	F5. Spatio-temporal modelling for human and ecosystem health assessment	L13. Climate impact on water and water resources adaptation	E4. Modelling and financial management	L16. Modelling water quality and treatment	ASOR 2015 J2. Stochastic networks
Geostatistical water table mapping: cautionary tales, tribulations and resolutions <i>Peterson, T.J., Western, A.W., Carrara, E., Sharples, J.P., Costelloe, J.F., Cheng, X. and Frost, A.J.</i>	An assessment of current and critical nitrogen and phosphorus losses from European agricultural soils <i>Kros, J., de Vries, W., Römkens, P.F.A.M. and Voogd, J.C.</i>	Bayesian Network and System Thinking modelling to manage water quality related health risks from extreme events <i>Bertone, E., Sahin, O., Richards, R. and Roiko, A.</i>	<b>KEYNOTE cont.</b> <b>Evaluation of financial sustainability of the Japanese medical system: Analysis of the length of hospital stay for diabetes patients</b> <i>Nawata, K. and Kawabuchi, K.</i>	The value of stochastic modelling for the characterisation of maturation pond performance and health risk assessment of effluent reuse options <i>Kozak, S., Xie, G., Leusch, F. and Roiko, A.</i>	Estimating hitting probabilities of an interacting particle system on a graph <i>Brereton, T., Eckard, C. and Schmidt, V.</i>
The Groundwater Statistical Toolkit: an open source package for hydrogeological insights <i>Peterson, T.J., Western, A.W. and Gee, E.</i>	Modelling the effect of work related mobility on air pollution exposure in the UK <i>Reis, S., Vieno, M., Steinle, S., Beck, R., Carnell, E. and Dragosits, U.</i>	An imbalance assessment of coastal water supply and demand in a highly populated area: a system dynamics approach <i>Thuc, P.D., Smart, J.C.R., Capon, J.S., Hadwen, W.L. and Sahin, O.</i>	A volatility impulse response analysis applying multivariate GARCH models and news events around the GFC <i>Allen, D.E., McAleer, M.J., Powell, R. and Singh, A.K.</i>	Improving hydrodynamic performance of waste stabilisation ponds using three-dimensional numerical models <i>Li, M., Zhang, H., Lemckert, C. and Stratton, H.</i>	Fisher Information, stochastic processes and generating functions <i>Eshragh, A.</i>
A probabilistic approach to climate regime shift detection based on the Maronna-Yohai bivariate test <i>Ricketts, J.H.</i>	Optimising seasonal environmental water decisions in complex regulated river systems: A case study using the Murrumbidgee River <i>Szemis, J.M., Kaur, S., Horne, A., Stewardson, M.J., Costa, A., Webb, J.A., Boland, N., Nathan, R. and Davies, J.</i>	Challenges and practicalities associated with water resources management and climate change adaptation in the Mekong River Basin <i>Kiem, A.S., Phan, N.H.T. and Piman, T.</i>	Quantile regression, VaR and CVAR. An empirical beta comparison of the techniques in relation to credit risk. <i>Allen, D.E., Powell, R.J. and Singh, A.K.</i>	Simulating nitrogen long-term fate and transport processes at a regional scale with a surface and subsurface fully-coupled watershed model <i>Mori, K., Tawara, Y., Hazart, A., Tada, K. and Tosaka, H.</i>	Mean shift detection for state space models <i>Kuhn, J., Mandjes, M. and Taimre, R.</i>
Joint multiple time-series modelling of groundwater hydrographs: an approach to overcome data paucity for the improved decomposition of hydrographs to individual drivers <i>Shapoori, V., Peterson, T.J., Western, A.W. and Costelloe, J.F.</i>	There is more to the UK particulate matter than Saharan dust <i>Vieno, M., Twigg, M., Heal, M.R., MacKenzie, I.A., Braban, C.F., Beck, R., Moring, A., Ots, R. and Reis, S.</i>	Drought assessment in the Pampanga River basin, the Philippines – Part 2: A comparative SPI approach for quantifying climate change hazards <i>Hasegawa, A., Gusyev, M., Ushiyama, T., Magome, J. and Iwami, Y.</i>	Modelling and simulation of directional financial time series <i>Mansor, M.M., Green, D.A. and Metcalfe, A.V.</i>	An exploratory water quality analysis of the Hawkesbury-Nepean River catchment <i>Muzirwa, R., Haque, M.M., Rahman, A. and Tomlinson, D.</i>	A simulation algorithm for queueing network stability identification <i>Patch, B.</i>
Can recursive digital filters ever produce accurate baseflow estimates? <i>Su, C.-H., Costelloe, J.F., Peterson, T.J. and Western, A.W.</i>	Predicting the temporal response of seagrass meadows to dredging using Dynamic Bayesian Networks <i>Wu, P.P.-Y., Mengersen, K., McMahon, K., Kendrick, G.A. and Caley, M.J.</i>	Drought assessment in the Pampanga River basin, the Philippines - Part 3: Evaluating climate change impacts on dam infrastructure with standardized indices <i>Gusyev, M.A., Hasegawa, A., Magome, J., Umino, H. and Sawano, H.</i>	Forecasting leading death causes in Australia using extended CreditRisk+ <i>Shevchenko, P.V., Hirz, J. and Schmock, U.</i>	Modelling of chloramine in water distribution networks – challenges and limitations <i>Kastl, G. and Sathasivan, A.</i>	

## Thursday 3 December

12:45	Lunch	Foyers A & B					
13:45	Plenary	Arena 1B	Associate Professor Jason Evans High-resolution climate change projections over Australia: producing policy-relevant information				
	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	A1. Industrial modelling and simulation	H4. Modelling and visualizing data – in health, health surveillance, drug discovery etc.	L9. Modelling and trends of regional and global water and energy fluxes	C2. Advances in neural networks, soft computing and machine learning in biological, environmental and social systems	B3. Modelling to increase productivity and reduce environmental impact of farming systems	L8. Water planning and management: Issues, challenges, and solutions	
14:30	Internal versus external complexity: how organizations react <i>Jamshidnezhad, B.</i>	Can we use the approaches of ecological inference to learn about the potential for dependence bias in dual-system estimation? An application to cancer registration data. <i>Brown, J.J., Beh, E.J. and Hudson, I.L.</i>	Assessment and comparison of alternate conceptual ecohydrological models <i>Naseem, B., Ajami, H., Cordero, I. and Sharma, A.</i>	Diagnostic study on early detection of lung cancer using neural network <i>Kharazi, M. and Samarasinghe, S.</i>	Quantifying key sources of variability in cover crop reduction of N leaching <i>Teixeira, E.I., Johnstone, P., Chakwizira, E., de Ruiter, J., Malcolm, B., Shaw, N., Zyskowski, R., Khaembah, E., Sharp, J., Meenken, E., Fraser, P., Thomas, S., Brown, H. and Curtin, D.</i>	A comparison of socio-ecological frameworks for integrated assessment modelling of agricultural groundwater use <i>Macadam, L.M., Jakeman, A.J. and Pittock, J.</i>	
14:50	Dynamics of a discrete population model with variable carrying capacity <i>Dose, T., Jovanoski, Z., Towers, I.N. and Sidhu, H.S.</i>	On the quantification of statistical significance of the extent of association projected on the margins of 2x2 tables, when only the aggregate data is available: A pseudo p-value approach – applied to leukaemia relapse data <i>Cheema, S.A., Beh, E.J. and Hudson, I.L.</i>	Cross-basin comparison of water availability and use from global hydrological models <i>Peña-Arancibia, J.L., Mainuddin, M. and Chiew, F.H.S.</i>	Hydrologic simulation through dynamically evolving models – a data assimilation approach <i>Pathiraja, S., Marshall, L., Sharma, A. and Moradkhani, H.</i>	Will modifying soil water holding capacity increase the resilience of southern Australian crop-livestock farms to climate change? <i>Thomas, D.S., Hayman, P.T. and Ghahramani, A.</i>	The regional feasibility of augmented local water storages <i>Nikkels, M.J., van Bakel, P.J.T., Delsman, J.R., de Louw, P.G.B., van Oel, P.R., Stuyt, L.C.P.M., Vellinga, P., Velstra, J. and Hellegers, P.J.G.J.</i>	
15:10	Rational function approximations in a response surface methodology <i>Keesman, K.J.</i>	Inference and Simulation for Dynamic Network Models from Egocentrically Sampled Data <i>Krivitsky, P.N.</i>	Statewide space-time water table mapping: Victoria's water table over 30 years <i>Peterson, T.J., Western, A.W., Cheng, X., Costelloe, J.F., Carrara, E., Frost, A.J. and McAuley, C.</i>	Invited paper: Stepwise symbolic regression compared to a probabilistic bivariate test for step-change detection <i>Ricketts, J.H.</i>	Predictions of nitrogen leaching from a well-drained soil under dryland and irrigated dairy farming using APSIM and OVERSEER <i>Vibart, R.E., Vogeler, I., Cichota, R. and Horne, D.</i>	Is the north our next food bowl? A comprehensive assessment of surface water storage potential in northern Australia. <i>Petheram, C., Gallant, J., Wilson, P., Stone, P. and Read, A.</i>	
15:30	Afternoon tea	Foyers A & B					
	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	E6. Real options analysis for industrial applications	Stream M. Energy, integrated infrastructure and urban planning	L9. Modelling and trends of regional and global water and energy fluxes	L14. Hydrologic non-stationarity and modelling under change	B3. Modelling to increase productivity and reduce environmental impact of farming systems	L8. Water planning and management: Issues, challenges, and solutions	
16:00	Switching surfaces for optimal natural resource extraction under uncertainty <i>Chen, W., Tarnopolskaya, T., Langrené, N. and Lo, T.</i>	Modeling the impacts of current patterns of urban form expansion in Kuwait with the use of ABM and GIS <i>Alghais, N. and Pullar, D.</i>	Covariance partitioning: a new approach to evaluating hydrologic models <i>Sun, F., Roderick, M.L. and Farquhar, G.D.</i>	On the non-stationarity of hydrological response in anthropogenically unaffected catchments: An Australian perspective <i>Ajami, H., Sharma, A., Band, L.E., Evans, J.P., Tuteja, N.K., Amirthanathan, G. and Bari, M.</i>	Improvement of maize phenology simulation under climate change in China's Corn Belt <i>Wang, J., Wang, N., Wang, E. and He, D.</i>	Modelling dam resilience with a bottom-up 'decision-scaling framework' <i>Potter, N.J. and Zhang, L.</i>	

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Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
F8. Squeezing the juice out of data – advanced data analysis techniques	F5. Spatio-temporal modelling for human and ecosystem health assessment	L13. Climate impact on water and water resources adaptation	G1. Semantic web evolution in disaster management and environmental protection – SWEDMEP	L17. Water sensitive urban design – current issues, modelling strategies and challenges	K13. What should we be teaching the next generation? Identifying core modelling practices
Flexible and modular visualisation and data discovery tools for environmental information <i>Yu, J., Hodge, J., Leighton, B., Seaton, S., Vleeshouwer, J., Tickell, S. and Car, N.J.</i>	Simulating freshwater ecosystem health in Flanders by using the ELMO toolbox <i>Gobeyn, S., Bennetsen, E., Verhelst, P., Goethals, P.</i>	CMIP5 climate change projections for hydrological modelling in South Asia <i>Zheng, H., Chiew, F.H.S. and Charles, S.</i>	Towards an ontology-based soil information system <i>Shu, Y. and Liu, Q.</i>	Modelling the impacts of rainwater tanks on sanitary sewer overflows <i>Nasrin, T., Muttill, N. and Sharma, A.K.</i>	Synthesising and evaluating the criteria of successful decision support models to support water resource assessment and management <i>Merritt, W.S., Fu, B., Ticehurst, J.L., El Sawah, S., Croke, B.F.W., Dyer, F., Guillaume, J.H.A., Jakeman, A.J., Pollino, C.A., Roberts, A. and Vigiak, O.</i>
Sensitivity of the Hilbert-Huang Transform to interpolation methodology: examples using synthetic and ocean data <i>Ziaeyan Bahri, F.M. and Sharples, J.J.</i>		Comparative performance of GR4JSG and J2000 hydrological models in the Dudh Koshi catchment of the Himalayan region <i>Nepal, S., Zheng, H., Penton, D.J. and Neumann, L.E.</i>		Water quality issues and challenges in mixing recycled water with stormwater <i>Perera, M.P., Ng, A.W.M., Muthukumaran, S., O'Connor, J. and Perera, B.J.C.</i>	Interdisciplinary teaching of statistics <i>Stojanovski, E.</i>
					Usability principles for the design of virtual tours <i>Pérez, Y., Berres, S., Rodríguez, E., Rodríguez, S., Antúnez, G., Mercado, A., Soledad, M., Jara, C. and Ulloa, M.</i>
Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
F11. Land surface monitoring and prediction using remote sensing	L18. Implementing basin planning models in developing countries	L10. Impacts of coal seam gas and coal mining developments on water resources	DORS 2015 D5. Logistics and fleet management for defence applications	L5. Advances in floodplain inundation modelling: from local to regional scales	E2. Financial risk management
Detecting vegetation groundwater use from satellite observations of surface temperature and surface energy balance modelling <i>Gow, L.J., Barrett, D.J., Renzullo, L.J., Phinn, S.R. and O'Grady, A.P.</i>	Hydrological modelling for water availability assessment in the Brahmani and Baitarni Basin, India <i>Zheng, H. and Vaze, J.</i>	Adaptive management of groundwater resources <i>Gao, L.</i>	Military inventory capacity and stock planning with surge and warning time and supplier constraints <i>Calbert, G., Thiagarajan, R. and Rahman, M.</i>	<b>Invited paper:</b> Floodplain inundation modelling: why, how and where from here? <i>Teng, J., Vaze, J., Dutta, D., Kim, S. and Ticehurst, C.</i>	Local government debt and regional growth in Indonesia <i>Akbar, R.</i>

## Thursday 3 December

	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	E6. Real options analysis for industrial applications	Stream M. Energy, integrated infrastructure and urban planning	L9. Modelling and trends of regional and global water and energy fluxes	L14. Hydrologic non-stationarity and modelling under change	B3. Modelling to increase productivity and reduce environmental impact of farming systems	L8. Water planning and management: Issues, challenges, and solutions	
16:20	On the valuation of natural resource investments using optimal stochastic switching <i>Hinz, J., Tarnopolskaya, T. and Yee, J.</i>	Dynamic modelling of energy transitions using a coupled modelling-narrative approach <i>Moallemi, E.A., de Haan, F.J., George, B.A., Webb, J.M. and Aye, L.</i>	Air temperature, missing data and interpolation <i>Wang, T., Sun, F. and Zhang, J.</i>	Modelling catchment response to anthropogenic driven non-stationarity <i>Croke, B.F.W.</i>	Potential impact of increased heat tolerance of grain formation on maize yield under future warming <i>Zhang, Y. and Zhao, Y.X.</i>	Introducing Velocity Index for Water Distribution Systems <i>Pour Akbarkhiavi, S., Imteaz, M.A. and Rajeev, P.</i>	
16:40	New Regression Monte Carlo Methods for High-dimensional Real Options Problems in Minerals industry <i>Langrené, N., Tarnopolskaya, T., Chen, W., Zhu, Z. and Cooksey, M.</i>	Modelling demographic relationships <i>Phillips, G.</i>	The effects of deforestation on the water cycle in Amazon <i>Yeo, I., Han, S. and Lee, E.</i>	Is inter-basin groundwater exchange required in rainfall-runoff models: The Australian context <i>Hughes, J.D., Potter, N.J. and Zhang, L.</i>	Quantifying the effects of management practices on crop production and water use efficiency under a changing climatic background <i>Zhang, X.Y., Sun, H.Y. and Yang, Y.H.</i>	Long distance water transfer: Socio-economic development and environmental sustainability <i>Sivakumar, B., Chen, J. and Shi, H.</i>	
17:00	Choosing crop rotations under uncertainty: a multi-period dynamic portfolio optimization approach <i>Lee, G., Bao, C., Langrene, N. and Zhu, Z.</i>	Revealing the emergence of future urban pattern in a post-industrial region – cells and agents in interaction <i>Rienow, A. and Menz, G.</i>	Contrasted evapotranspiration drivers across global humid and dry land surface <i>Zhang, Y.Q., Chiew, F.H.S. and Peña-Arancibia, J.L.</i>	Trend detection in short and long duration storm events: a case study for NSW, Australia <i>Hajani, E., Rahman, A. and Rahman, A.S.</i>	Modelling nitrogen uptake by sugarcane crops to inform synchrony of N supply from controlled release fertiliser <i>Zhao, Z. and Verburg, K.</i>	Estimating volume of water harvested by farm dams in Murray-Darling Basin <i>Srikanthan, R., Barua, S. and Hafeez, M.</i>	
17:20	Optimal asset liability management for post-retirement stage with income protection product <i>Sneddon, T., Bao, C. and Zhu, Z.</i>	Modelling urban social, economic and demographic systems for small areas: a joined model approach <i>Tanton, R., Perez, P., Vidyattama, Y., Namazi, M., Masouman, A. and Petit, C.</i>		Intensification of storms due to warmer temperatures <i>Wasko, C. and Sharma, A.</i>	Using statistical and process-based crop models to predict maize yield responses to climate change <i>Zhao, Y.X.</i>	Adaptive and optimal scheduling of environmental water management alternatives using environmental water allocation forecasts: A South Australian River Murray case study <i>Szemis, J.M., Dandy, G.C. and Maier, H.R.</i>	
17:40	Towards Dynamic Financial Valuation of Social Licence to Operate under Uncertainty <i>Tarnopolskaya, T. and Littleboy, A.</i>	Stochastic Differential Equations for point-specific traffic flow modelling in regional Australia <i>Namazi-Rad, M., Dunbar, M. and Tahmasbi, R.</i>					
18:00		TraNSIT: identifying optimal infrastructure investment <i>McFallan, S., Higgins, A., Laredo, L. and Prestwidge, D.</i>					
19:00	Pre-dinner drinks						
19:30	Gala Dinner	Hall 3 & 4					



## Thursday 3 December

Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
<b>F11. Land surface monitoring and prediction using remote sensing</b>	<b>L18. Implementing basin planning models in developing countries</b>	<b>L10. Impacts of coal seam gas and coal mining developments on water resources</b>	<b>DORS 2015 D5. Logistics and fleet management for defence applications</b>	<b>L5. Advances in floodplain inundation modelling: from local to regional scales</b>	<b>E2. Financial risk management</b>
Hydrological links between cosmic-ray soil moisture retrievals and remotely sensed evaporation across a semi-arid pasture site <i>Jana, R.B., Ershadi, A. and McCabe, M.F.</i>	Investigating environmental watering options using Source IMS: a case study – the River Murray, Australia <i>Alam, M.J., Korn, A. and Hardy, M.</i>	Identifying key influences for managing mine water <i>Gao, L., Chen, Y. and Barrett, D.</i>	Analysing truck-trailer-flatrack mix for a given road network with known supply and demand <i>Lakshika, E., Barlow, M., Sarker, R. and Gaidow, S.</i>	Calibration of a flood model using the MIKE FLOOD modelling package employing the direct rainfall technique <i>Alam, M.S.</i>	Volatility spillovers between energy and agricultural markets in theory and practice <i>Chang, C.-L., Li, Y. and McAleer, M.</i>
Plant species identification in coastal dunes using ground images <i>Kawakita, S. and Koyama, L.A.</i>	Companion Modelling for resilient water management: Stakeholders' perceptions of water dynamics and collective learning at catchment scale <i>Buchheit, P., Campo, P., Dumrongrojwathana, P. and Promburom, P.</i>	High resolution spatial modelling approaches for monitoring surface water and erosion impacts of coal seam gas infrastructure <i>Huth, N.I., Poulton, P.L., Caccetta, P., Xiaoliang, W., Cocks, B. and Wallace, J.</i>	Testing aircraft fleet management policies using simulation experiments <i>Marlow, D.O., Sanchez, S.M. and Sanchez, P.J.</i>	Open source flood simulation with a 2D discontinuous-elevation hydrodynamic model <i>Davies, G. and Roberts, S.</i>	A discussion on the Innovation Distribution of Markov Regime-Switching GARCH Model <i>Shi, Y. and Ho, K-Y.</i>
Evaluation of multiple satellite evaporation products in two dryland regions using GRACE <i>Lopez, O., McCabe, M.F. and Houborg, R.</i>	Building capacity in basin planning in South Asia – an Australian government investment in regional sustainable development <i>Cuddy, S.M., Podger, G.M., Wallbrink, P.J., Penton, D.J., Pollino, C.A. and Ahmad, M.D.</i>	Generic, robust model -and data-independent uncertainty quantification <i>Peeters, L.J.M.</i>	Statistical modelling and analysis of logistics data for land vehicle fleet management <i>Pietsch, D., Baker, S., Brealey, N. and Sherman, G.D.</i>	Construction of depth-discharge relation for inundation simulation <i>Kudo, S., Yorozyua, A., Koseki, H., Iwami, Y. and Nakatsugawa, M.</i>	Full and partial volatility and covolatility spillovers between energy and agricultural markets <i>Chang, C.-L., Li, Y. and McAleer, M.</i>
On the sensitivity of Land Surface Temperature estimates in arid irrigated lands using MODTRAN <i>Rosas, J., Houborg, R. and McCabe, M.F.</i>		Bioregional Assessments: Evaluating the impacts of coal mining and coal seam gas extraction on water-dependent assets <i>Post, D.A.</i>	Min/max inventory planning for military logistics <i>Shekh, S.</i>	A comparison of Landsat and MODIS flood inundation maps for hydrodynamic modelling in the Murray Darling Basin <i>Ticehurst, C., Dutta, D. and Vaze, J.</i>	Risk versus economic performance in a mixed fishery <i>Gourguet, S., Thébaud, O., Jennings, S., Little, L.R., Dichmont, C.M., Pascoe, S., Deng, R.A. and Doyen, L.</i>
Evaluation of a soil moisture downscaling algorithm using the SMAPEX data set in Australia <i>Wu, X., Walker, J. and Ye, N.</i>		The role of 3D geological models in assessing potential impacts of CSG activities: an example from the Clarence-Moreton bioregional assessment <i>Raiber, M., Rassam, D., Cui, T., Gilfedder, M. and Pagendam, D.</i>	Logistics management issues for military systems approaching the end of service life <i>Sherman, G.D., Brealey, N., Pietsch, D. and Baker, S.</i>	A MODFLOW– based approach to simulating wetland–groundwater interactions in the South East region of South Australia <i>Turnadge, C. and Lamontagne, S.</i>	Modeling longevity risk for multiple populations: the role of a roughness penalty <i>Kang, M., Liu, Y., Li, J.S.-H. and Chan, W.S.</i>
The fourth SMAP Experiment (SMAPEX-4): preliminary results <i>Ye, N., Walker, J., Rüdiger, C., Wu, X., Jackson, T., Entekhabi, D., DeJeu, R., Merlin, O., Kim, E. and Renzullo, L.</i>		Assessment of the cumulative groundwater impacts of CSG and coal mining developments in the Surat Cumulative Management Area <i>Sreekanth, J., Holland, K., Sander, R., Merrin, L., Hodgkinson, J. and Davies, P.</i>		Using a fast conceptual river model for floodplain inundation forecasting and real-time flood control – a case study in Flanders, Belgium <i>Vermuyten, E., Meert, P., Wolfs, V. and Willems, P.</i>	

## Friday 4 December

8:30 Registration and Information Desk

Ground Floor

	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	A3. Spatial predictive modelling: model/feature selection and predictive accuracy	Stream M. Energy, integrated infrastructure and urban planning	H3. Modelling health status – mental and physical health	L9. Modelling and trends of regional and global water and energy fluxes	C4. Research data provenance	L7. Innovations in water engineering: The role of data-based techniques	
9:15	<b>Invited paper:</b> A Multiple-point Geostatistics Method for filling gaps in Landsat ETM+ SLC-off images <i>Yin, G., Mariethoz, G. and McCabe, M.F.</i>	Modelling the likelihood of urban residential fires considering fire history and the built environment: A Markov Chain approach <i>Ardianto, R., Chhetri, P. and Dunstall, S.</i>	Modelling change in multivariate depression symptoms adjusting for gender and baseline temperament and character traits: a Latent Transition approach <i>Hudson, I.L., Leigh, L. and Joyce, P.</i>	Geological weighing lysimeters for real-time surface water budget monitoring of climatic shifts and trends? <i>Bardsley, W.E.</i>	A stacked-ruleset methodology for provenance management <i>Ayre, M., Woodman, S., Wise, C. and Car, N.J.</i>	Improved Bias Correction Spatial Disaggregation method using Rank Correlation <i>Nahar, J., Johnson, F. and Sharma, A.</i>	
9:35	Estimation of Near Ground PM10 Concentrations using Artificial Neural Networks <i>Zandi, S., Whalley, J., Sallis, P. and Ghobakhlou, A.</i>	Improved numerical weather predictions by using optimised urban model parameter values and satellite derived tree heights <i>Dharssi, I., Steinle, P. and Fernon, J.</i>	Do working hours matter in maintaining cognitive ability among middle-aged and older adults? <i>Kajitani, S., McKenzie, C. and Sakata, K.</i>	<b>Invited paper:</b> Global warming accelerates the degradation of desert vegetation in the Central Asia <i>Chen, Y., Li, W. and Li, Z.</i>	Complex licence requirements for the Bioregional Assessments Programme managed by provenance <i>Car, N.J. and Stenson, M.P.</i>	Correcting for systematic biases in GCM simulations in the frequency domain <i>Nguyen, H., Mehrotra, R. and Sharma, A.</i>	
9:55	Predicting the spatial distribution of seabed hardness based on multiple categorical data using random forest <i>Li, J., Tran, M. and Siwabessy, J.</i>	Modelling infrastructure interdependency at a local scale: value, methodologies and challenges <i>Hasan, S., Tonmoy, F.N., Follente, G. and El-Zein, A.</i>	Modelling risk profiles of depression symptoms using Cloninger's temperament and character traits: a non-iterative approach to assess linear-by-linear association within ordered contingency tables <i>Zafar, S., Hudson, I.L., Beh, E.J. and Joyce, P.R.</i>	Spatial variability of Australian ecosystem water use efficiency <i>Cheng, L., Zhang, L., Wang, Y-P., Lu, X., Chiew, F.H.S. and Canadell, J.G.</i>	Creating provenance super graphs using pingbacks <i>Car, N.J. and Woodman, S.</i>	Cost-effective groundwater quality monitoring network design using stochastic simulation and cross-entropy optimization <i>Pagendam, D., Lau, H. and Sreekanth, J.</i>	
10:15	A surface cover change detection method based on the Australian Geoscience Data Cube <i>Tan, P., Sagar, S., Mueller, N., Lymburner, L., Thankappan, M. and Lewis, A.</i>	Modelling ad-hoc DRT over many days: a preliminary study <i>Ronald, N., Thompson, R. and Winter, S.</i>	Simulation modelling: A systems approach to support the use of evidence to inform decision making in gestational diabetes care <i>Freebairn, L., Atkinson, J., Kelly, P., McDonnell, G. and Rychetnik, L.</i>	Seasonal patterns and long-term trends of runoff and water quality component in the Yangtze River, China <i>He, B., Duan, W., Yang, G. and Chen, W.</i>	PROV and real things <i>Cox, S.J.D. and Car, N.J.</i>	Fault detection of non-residential water meters <i>Roberts, S.E. and Monks, I.R.</i>	
10:35	<b>Morning tea</b>	<b>Foyers A &amp; B</b>					
	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	A3. Spatial predictive modelling: model/feature selection and predictive accuracy	Stream M. Energy, integrated infrastructure and urban planning	F10. GIS and environmental modelling	L9. Modelling and trends of regional and global water and energy fluxes	C4. Research data provenance	L7. Innovations in water engineering: The role of data-based techniques	
11:00	Evaluating ecological niche modelling techniques <i>Dekker, A.H. and Rowley, J.J.L.</i>	A multi-functional large pumped storage scheme for New Zealand in support of renewable energy development? <i>Bardsley, W.E. and Majeed, M.</i>	Effect of floristic niche width on community-level ecosystem function in the Wet tropics <i>Burley, H., Mokany, K., Laffan, S. and Ferrier, S.</i>	Trends in hydrological variables in large basins in Tibetan Plateau <i>Li, H., Zhang, Y., Li, F., Qin, G. and Wang, X.</i>	Capturing data provenance with a user-driven feedback approach <i>Devaraju, A. and Klump, J.</i>	Short-term prediction of flood events in a small urbanized watershed using multi-year hydrological records <i>Saffarpour, S., Erechtkoukova, M.G., Khaiteh, P.A., Chen, S.Y. and Heralall, M.</i>	

Friday 4 December

Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
F2. Physical, chemical, and biological ocean modelling	L6. Flood modelling and design under climate variability and change	L15. Water resources management informed by hydroclimatic forecasts	E5. Combining information in socio-economic modelling and forecasting	K9. Environmental modelling with stakeholders: beyond the soft system methodology	ASOR 2015 J5. Emerging applications in operations research
<b>Stream F. Environment and ecology</b> <b>KEYNOTE:</b> <b>Zooplankton foraging induces chaos in dynamic green ocean models</b> <i>Cropp, R.A., Moroz, I.M. and Norbury, J.</i>	Development of an improved flood frequency curve applying Bulletin 17B guidelines <i>Alam, M.S.</i>	Seasonal forecasts for reservoir systems operation with an over-year carryover capacity – what is their value? <i>Arena, C., Cannarozzo, M. and Mazzola, M.R.</i>	Is it optimal to combine forecast with a simple average? <i>Chan, F. and Pauwels, L.</i>	Identifying decision drivers to support the application of Management Strategy Evaluation in the coastal zone <i>Dutra, L.X.C., Thébaud, O., Boschetti, F., Smith, A.D.M. and Dichmont, C.M.</i>	Markov Decision Process Model for optimisation of patient flow <i>Clissold, A., Filar, J., Qin, S. and Ward, D.</i>
	A New Probabilistic Rational Method for design flood estimation in ungauged catchments for the State of New South Wales in Australia <i>Alsuwaidi, O., Haque, M.M., Rahman, A. and Haddad, K.</i>	Towards operational forecasting of agricultural soil water in Australia <i>Argent, R.M., Western, A.W. and Lill, A.</i>	Modelling Body Mass Index Distribution using Maximum Entropy Density <i>Chan, F., Harris, M. and Singh, R.</i>	Sustainable groundwater management with tradable permits <i>Pereau, J.-C., Mouysset, L. and Doyen, L.</i>	Group assessment of Interview Ready Model reliability <i>Coutts, A.</i>
Formulating chemical fugacity for general circulation models <i>Bates, M.L., Cropp, R.A. and Hawker, D.W.</i>	Development and validation of Artificial Intelligence Based Regional Flood Estimation Model for Eastern Australia <i>Aziz, K., Kader, F., Ahsan, A. and Rahman, A.</i>	On the predictability of SSTA indices from CMIP5 decadal experiments <i>Choudhury, D., Sharma, A., Gupta, A.S., Mehrotra, R. and Sivakumar, B.</i>	Can Multivariate GARCH Models really improve Value-at-Risk forecasts? <i>Sia, C.S. and Chan, F.</i>	Informing ecosystem-based management of the range extending long-spined sea urchin using a structured decision making process <i>Robinson, L.M., Marzloff, M.P., Jennings, S., Frusher, S., Nicol, S., Pecl, G., van Putten, I., Hobday, A.J., Haward, M., Tracey, S. and Hartmann, K.</i>	Using optimisation to suggest alternative supply chains in the context of industrial symbiosis <i>Stock, F., Dunstall, S., Ayre, M., Ernst, A., Nazari, A., Thiruvady, D. and King, S.</i>
	Development of a regional flood frequency estimation model for Pilbara, Australia <i>Haque, M.M., Rahman, A., Haddad, K., Kuczera, G. and Weeks, W.</i>	Getting it right: the roles of research, stakeholders, and delivery for a seasonal streamflow forecasting service across Australia <i>Feikema, P., Shin, D., Zhou, S., Lerat, J., Le, B., Wilson, T., Khan, U., Pickett-Heaps, C., MacDonald, A., Kent, D. and Tuteja, N.K.</i>	Quantitative measurement of contagion effects during a Global Financial Crisis: Evidence from selected countries <i>Wellalage, N.H., Abidin, S. and Wang, L.</i>	Multi-criteria decision analysis as a learning platform to support water resources management – experience from case studies of three countries <i>Yang, H., Karjalainen, T.P., Wang, X.J. and Osterwalder, L.</i>	
Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
F2. Physical, chemical, and biological ocean modelling	L6. Flood modelling and design under climate variability and change	L15. Water resources management informed by hydroclimatic forecasts	DORS 2015 D2. Experimentation and wargaming for defence applications	K10. Ecological-economic approaches to support ecosystem-based management of marine living resources	ASOR 2015 J6. Health, education and life sciences
Parameter estimation in complex plankton models using the Boundary Eigenvalue Nudging – Genetic Algorithm (BENGA) Method <i>Cropp, R.A., Bates, M.L., Hawker, D.W. and Norbury, J.</i>	Regional flood estimation for NSW: Comparison of quantile regression and parameter regression techniques <i>Kader, F., Derbas, A., Haddad, K. and Rahman, A.</i>	<b>Invited paper:</b> Using hydroclimatic forecasts to improve water resources management – how to determine what is important and useful? <i>Kiem, A.S. and Tozer, C.</i>	<b>Stream D. DORS – Defence and homeland security modelling</b> <b>KEYNOTE:</b> <b>The diversity of New Zealand's Defence Operations Analysis</b> <i>Galligan, D.P.</i>	Eco-viability for ecosystem based fisheries management <i>Doyen, L., Béné, C., Bertignac, M., Blanchard, F., Cissé, A.A., Dichmont, C.M., Gourguet, S., Guyader, O., Hardy, P.-Y., Jennings, S., Little, L.R., Macher, C., Mills, D., Moussair, A., Pascoe, S., Pereau, J.-C., Sanz, N., Schwarz, A. M., Smith, A.D.M. and Thébaud, O.</i>	Heuristic approaches for Multi-Criteria Optimisation in Kidney Exchange Programs <i>Nickholds, L. and Mak-Hau, V.</i>

## Friday 4 December

	Arena 1B	Meeting Room 1	Meeting Room 2	Meeting Room 3	Meeting Room 4	Meeting Room 5	
	A3. Spatial predictive modelling: model/feature selection and predictive accuracy	Stream M. Energy, integrated infrastructure and urban planning <i>Yu, J., Lipkin, F. and Moglia, M.</i>	F10. GIS and environmental modelling	L9. Modelling and trends of regional and global water and energy fluxes <i>McCabe, M.F., Ershadi, A., Jimenez, C., Michel, D., Miralles, D.G. and Wood, E.F.</i>	C4. Research data provenance <i>Fitch, P., Car, N.J. and Fyfe, S.</i>	L7. Innovations in water engineering: The role of data-based techniques <i>Sivakumar, B., Woldemeskel, F.M., Fang, K., Guerra de Aguilar, M. and Han, X.</i>	
11:20	Propagation of measurement uncertainty in spatial characterisation of recreational fishing catch rates using logistic transform indicator kriging <i>Aidoo, E.N., Mueller, U., Hyndes, G.A. and Ryan, K.L.</i>	Novel spatial analysis of residential resource consumption via the Melbourne train network <i>Yu, J., Lipkin, F. and Moglia, M.</i>	Moving window analysis links landscape-scale resource utilization to habitat suitability models of feral pigs in northern Australia <i>Froese, J.G., Smith, C.S., McAlpine, C.A., Durr, P.A. and van Klinken, R.D.</i>	Development and evaluation of global land surface evaporative flux records <i>McCabe, M.F., Ershadi, A., Jimenez, C., Michel, D., Miralles, D.G. and Wood, E.F.</i>	Implementing an organisation-wide approach to provenance management for Geoscience Australia <i>Fitch, P., Car, N.J. and Fyfe, S.</i>	Complex networks for studying the structure and dynamics of hydrologic connections <i>Sivakumar, B., Woldemeskel, F.M., Fang, K., Guerra de Aguilar, M. and Han, X.</i>	
11:40	Predicting potential spatial distribution of Toothed Leionema ( <i>Leionema Bilobum</i> sub sp. <i>Serrulatum</i> ) using Weights-of-Evidence modelling with GIS <i>Zhu, X.</i>	Improving social media monitoring and analysis tools for emergency management <i>Mason, C. and Power, R.</i>	Species richness, endemism and rarity under climate change using the Biodiversity and Climate Change Virtual Laboratory <i>Laffan, S.W., Hallgren, W., Beaumont, L., Bowness, A., Chambers, L., Graham, E., Holewa, H., Mackey, B., Nix, H., Price, J., Vanderwal, J., Warren, R. and Weis, G.</i>	Trends of water and energy fluxes and its implications to water resources in Haihe River Basin, China <i>Shen, Y., Guo, Y. and Zhang, Y.</i>	Identifying actors: a first step in effectively communicating provenance <i>Gallant, S.N., Car, N.J., Ahmad, M.E., Schmidt, R.K. and Merrin, L.E.</i>	A toolkit for investigating the importance of prior distribution in Bayesian hydrology <i>Tang, Y., Marshall, L., Sharma, A. and Smith, T.</i>	
12:00	Maximal autocorrelation factors for function-valued spatial/temporal data <i>Hooker, G., Roberts, S. and Shang, H.L.</i>	Integrated modelling to aid strategic urban and regional planning <i>Wickramasuriya, R., Perez, P., Huynh, N., Masouman, A. and Barthelmy, J.</i>	A GIS tool for land and water use planning in mining regions <i>Lechner, A.M., McIntyre, N., Bulovic, N., Kujala, H., Whitehead, A., Webster, A., Wintle, B., Rifkin, W. and Scott, M.</i>		Feature and attribute level provenance for spatial data supply chain using semantic web technologies <i>Sadiq, M.A., West, G., Mcmeekin, D.A., Arnold, L. and Moncrief, S.</i>	An entropy-based approach to identify equally informative input subsets for hydrological models <i>Taormina, R., Turner, S.W.D. and Galelli, S.</i>	
12:20		Challenges and opportunities for integrating land use, transport, and socio-economic models <i>van Delden, H., McDonald, G. and Vanhout, R.</i>	Modelling structures of terrain surface using GIS in Loess Plateau <i>Wang, C., Tu, X., Yang, Q., Du, H. and Jupp, D.L.B.</i>		Standard provenance reporting and scientific software management in virtual laboratories <i>Wise, C., Car, N.J., Fraser, R. and Squire, G.</i>	Low flow impact analysis of climate change considering an ensemble of hydrological model structures <i>Tran Quoc, Q., Huymans, M. and Willems, P.</i>	
12:40		Are people living in greener neighbourhoods happier? An Australian case study using microblog data <i>Wickramasuriya, R., Namazi-Rad, M. and Holderness, T.</i>			Metadata in Research Data Australia and the Open Provenance Model: A proposed mapping <i>Wu, M. and Treloar, A.</i>	A synthetic study to characterize alluvial groundwater responses to overbank flood recharge <i>Womera, S.A., Costelloe, J.F., Peterson, T.J. and Western, A.W.</i>	
13:00	Lunch						
14:00	Announcement of Student Prizes		Foyers A & B				
	Closing for MODSIM		Foyers A & B				

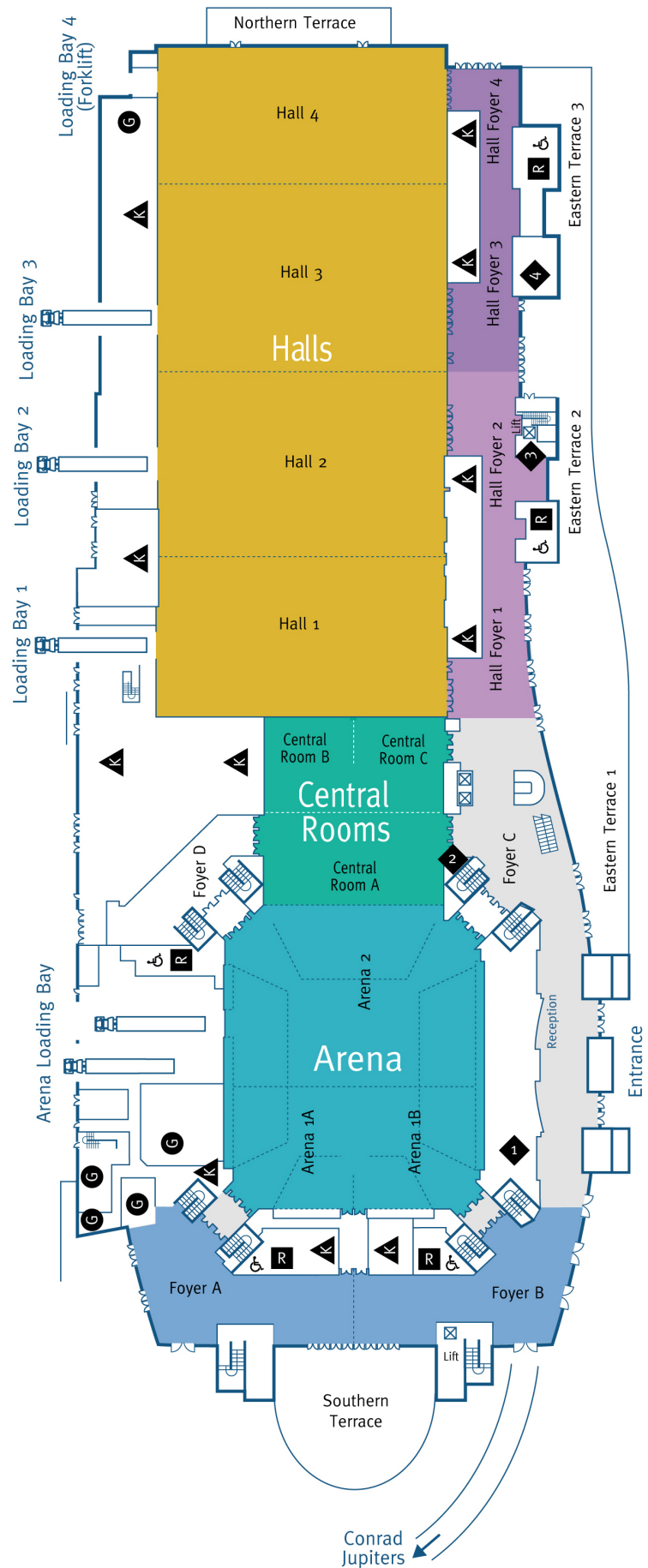
## Friday 4 December

Meeting Room 6	Meeting Room 7	Meeting Room 8	Meeting Room 9	Central Room A	Central Room C
<b>F2. Physical, chemical, and biological ocean modelling</b>	<b>L6. Flood modelling and design under climate variability and change</b>	<b>L15. Water resources management informed by hydroclimatic forecasts</b>	<b>DORS 2015</b> <b>D2. Experimentation and wargaming for defence applications</b>	<b>K10. Ecological-economic approaches to support ecosystem-based management of marine living resources</b>	<b>ASOR 2015</b> <b>J6. Health, education and life sciences</b>
Queensland storm surge forecasting model design using sensitivity analysis <i>Faivre, G., Burston, J., Ware, D. and Tomlinson, R.</i>	The use of 2D hydrodynamic modelling to estimate flood discharge in a wet tropical river catchment <i>Karim, F.</i>	Evaluating a prototype ensemble water quantity and quality forecasting system for the Fitzroy River Basin <i>Neumann, L.E., Robertson, D.E., Robson, B. and Searle, R.</i>	<b>KEYNOTE cont.</b> <b>The diversity of New Zealand's Defence Operations Analysis</b> <i>Galligan, D.P.</i>	Multiple management objectives within a mixed prawn fishery: which win-win-win situations? <i>Gourguet, S., Thébaud, O., Jennings, S., Little, L.R., Dichmont, C.M., Pascoe, S. and Doyen, L.</i>	Polyhedral results for the Cardinality Constrained Multi-cycle Problem (CCMcP) and the Cardinality Constrained Cycles and Chains Problem (CCCCP) <i>Mak-Hau, V.</i>
Advancing dynamical understanding in the East Australian Current through a regional reanalysis using 4-dimensional variational data assimilation <i>Kerry, C., Roughan, M., Powell, B. and Oke, P.</i>	Uncertainty estimation in design rainfalls: A modelling framework for Qatar Arid Region <i>Mamoon, A.A., Rahman, A. and Qasem, H.</i>	SWIFT2: High performance software for short-medium term ensemble streamflow forecasting research and operations <i>Perraud, J.-M., Bridgart, R., Bennett, J.C. and Robertson, D.</i>	An overview of analytic wargaming in the U.S. Department of Defense <i>Appleget, J.A. and Burks, R.E.</i>	INFORMD: an environmental decision support tool for coastal salmon aquaculture in Tasmania, Australia <i>Little, L.R., Condie, S., MacLeod, C., Ross, J., Ogier, E., Gorton, B. and Sporic, M.</i>	Optimisation technology for operating theatres management <i>Anjomshoa, J., Smith, O., Davis, M. and Cavallar, S.V.</i>
Modelling wind-wave induced sediment resuspension in Sydney estuary <i>Lee, J.-H., Birch, G.F. and Lemckert, C.J.</i>	Assessing components of the natural inundation regime to restore through infrastructure projects <i>Montazeri, M., McCullough, D., Gibbs, M.S., Denny, M. and Aldridge, K.</i>	An overview of Hydro Tasmania's dynamic real-time inflow prediction and flood forecasting system <i>Robinson, K., Parkyn, R., Ling, F. and Blundy, S.</i>	The use of human-in-the-loop and constructive simulation to support operations research into MH-60R tactics development <i>Chandran, A., Luketić, N., Stewart, C. and Shokr, M.</i>	Impacts of marine closures on catch rate standardizations – simulation testing <i>Sporic, M. and Tuck, G.</i>	On the kidney exchange problem: Cardinality Constrained Cycle and Chain Problems on directed graphs-integer programming approaches <i>Mak-Hau, V.</i>
Numerical simulation of the morphodynamics of the Gold Coast Seaway <i>Sedigh, M., Tomlinson, R., Cartwright, N. and Etemad-Shahidi, A.</i>	Sampling variability in flood frequency analysis: how important is it? <i>Rahman, A.S., Karim, F. and Rahman, A.</i>	Post-processing of GCM rainfall and temperature forecasts for agriculture and water management <i>Schepen, A., Wang, Q.J. and Everingham, Y.</i>	An exploratory study using agent-based distillations to investigate reconnaissance scenarios in support of higher fidelity combat simulations <i>Chau, W. and Grieger, D.</i>	Modeling catch-quota management in a multi-species fishery <i>Thébaud, O., Gourguet, S., Lelong, P., Doyen, L., Little, R., Smith, T. and Pascoe, S.</i>	A class allocation policy decision support tool for schools <i>Gill, A.W.</i>
Modelling sea level and East Australian Current co-variability using the Hilbert-Huang transform <i>Ziaeyan Bahri, F.M., Sharples, J.J., Wang, X.H. and Sun, Y.-J.</i>	Features of Regional Flood Frequency Estimation (RFFE) Model in Australian rainfall and runoff <i>Rahman, A., Haddad, K. and Kuczera, G.</i>	Improved water resources management using seasonal ensemble streamflow forecasts: factors affecting performance in reservoir operations <i>Turner, S. and Galelli, S.</i>	No fifteen thousand men: an agent-based replication of Pickett's Charge <i>Dekker, A.H.</i>		

# Gold Coast Convention & Exhibition Centre Ground Floor



- Organisers Offices
- Public Restrooms
- Kitchens
- Green Rooms
- Disabled Restrooms



Conrad Jupiters



# Gold Coast Convention & Exhibition Centre

## First Floor





## Notes

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## **MODSIM 2015**

21st International Congress on Modelling and Simulation

## **ASOR 2015**

23rd National Conference of the Australian Society for Operations Research

## **DORS 2015**

DSTO led Defence Operations Research Symposium



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