

MONDAY 28 NOVEMBER

	WORKSHOPS: Groundwater Forum / WMO Hydrometry Workshop / Science Communication Workshop / Optical Nitrate Monitoring Workshop
16.00 - 18.00	Registration Desk Open - Copthorne Hotel (opposite Millennium Hotel)
17.00 - 19.00	Welcome Function: Copthorne Hotel - Impressions Bar

TUESDAY 29 NOVEMBER

7.00 - 8.00	Registration Desk Open
8.00 - 9.00	Official Opening Ceremony Welcome Powhiri
9.00 - 9.45	Keynote Speaker: Peter Goodwin - Idaho University Session Chair: James Ball Room: Galaxy I&II

Room	Galaxy I	Galaxy II	Copthorne I	Copthorne II
	FLOODS / DESIGN	URBAN HYDROLOGY	EDUCATION	DATA
Chair	James Ball	Brett Phillips	Jo Hoyle	Tim Davie
10.00 - 10.15	Regional Temporal Patterns for Australian Rainfall and Runoff Isabelle Testoni , WMAwater	Stormwater, waterway and water resources benefits of water conservation measures in Australian cities. Peter Coombes , Urban Water Cycle Solutions	The rejected hypothesis - it's contribution to science success. Stewart Cameron , GNS Science	Integrated monitoring - can it be done? Helen Shaw , Environment Canterbury
10.15 - 10.30	The Australian Rainfall and Runoff DataHub Mark Babister , WMAwater	The journey to a Water Sensitive City - A case study of Ballarat, Victoria, Australia. David Ebbs , Federation University Australia	Incorporating photography to educate future hydraulic engineers. Heide Friedrich , University of Auckland	The value of consumer grade drones (UAVs) for river engineers. Matthew Gardner , Land River Sea Consulting Ltd
10.30 - 11.00	Morning Tea			
	AUSTRALIAN RAINFALL & RUNOFF	URBAN HYDROLOGY	WATER RESOURCES / GROUNDWATER	DATA
Chair	Mark Babister	Peter Coombes	Paul White	Helen Rutter
11.00 - 11.15	New design rainfalls for Australia – lessons learned... Janice Green , Bureau of Meteorology	Antecedent Rainfall prior to Significant Flows in a Small Urban Catchment. James Ball , UTS	Attenuation of nutrients through a ferruginous cemented sand layer in sandy soils. Owen Hoar , PDC	Updating a national groundwater sampling protocol. Magali Moreau , GNS Science
11.15 - 11.30	Technical learnings from 36th Hydrology and Water Resources Symposium Workshop on Australian Rainfall and Runoff. Graeme Horrell , Graeme Horrell Consultancy Limited	Is there still room for large stormwater infrastructure in the Supercity? Lisa Dowson , Auckland Council	Classification of the New Zealand geological map into hydrogeological and aquifer properties. Rogier Westerhoff , GNS Science / Deltares	Optimisation of Greater Wellington Regional Council's Groundwater Monitoring Networks Using Multi-Correlational and Kriging -Based Methods. Doug Mzila , Greater Wellington Regional Council
11.30 - 11.45	Application of AWRA-L gridded soil moisture data for flood estimation. Peter Hill , Hydrology and Risk Consulting (HARC)	The role of tyre crumbs as a substitute for coarse aggregates in stormwater management features. Mitchell Sarpi , RMIT University	Hydrogeology and groundwater analysis for the Kaituna-Maketū-Pongakawa Water Management Area, Bay of Plenty, New Zealand. Breda Savoldelli , Jacobs Nz Ltd	Automated Geosynthesis: A framework concept for immediate spatial-temporal decision support from environmental data. Hermann Klug , University Of Salzburg
11.45 - 12.00	Addressing embedded bursts in design storms for flood hydrology. Matt Scoriah , HARC	Testing the limits: methods for setting stormwater contaminant limits for urban streams. Annette Semadeni-Davies , NIWA	Hydrogeological study of a Fossilised Geothermal Environment: Case Study for a Gold- Silver Prospect at Puhipuhi. Aslan Perwick , Pattle De-lamore Partners Ltd	

12.00 - 13.30	Lunch			
	Galaxy I	Galaxy II	Copthorne I	Copthorne II
	FLOODS / HISTORICAL	URBAN HYDROLOGY	WATER RESOURCES / MANAGED AQUIFER RECHARGE	DATA
Chair	Monique Retallick	David Ebbs	Andrew Fenemor	Lawrence Kees
13.30 -13.45	Extremes in rainfall and runoff in the Monsoonal North West of Australia from paleoclimate archives. Danielle Verdon-Kidd , University Of Newcastle	Rainwater Harvesting Potential in Sydney: Are We Harvesting Enough? Ataur Rahman , Western Sydney University	Hinds Catchment Managed Aquifer Recharge (MAR) Pilot Project Preliminary Results. Robert Bower , Golder Associates (NZ) Ltd	Utilisation of Non Contact Velocity Radar and Velocity Index Techniques to Validate Rating Extrapolations. Mic Clayton , Snowy Hydro Limited
13.45 -14.00	Extending flood series using river sedimentary archives. Ian Fuller , Massey University	Rainwater Harvesting Impacts on Environment. Muhammed Bhuiyan , RMIT University	Real-Time Groundwater Monitoring of Managed Recharge Dispersion of Groundwater at Hinds, Canterbury. Jens Rekker , Lincoln Agritech Ltd	Quantifying the effects of macrophyte growth on stage-discharge relationships in New Zealand lowland streams. Jo Hoyle , NIWA
14.00 - 14.15		Development of Generalized equations of water savings from rainwater tank for North Adelaide, Australia. Uendra Paudel , Swinburne University of Technology	Hinds MAR Pilot – Site Characterization Using Infiltration Test Pits. Eric Van Nieuwkerk , Golder Associates (NZ) Ltd	Deriving discharge with quantified uncertainty using index velocity observations: A probabilistic machine learning approach. Stuart Hamilton , Aquatic Informatics
14.15 - 14.30	Windsor - Australia's longest flood record. Mark Babister , WMAwater	Robust Supply Planning for a Metropolitan City - Portfolio Optimisation and Real Options. Kandiah Mahadeva , Department Of Primary Industries - Water	An Integrated Modelling Approach To The Design Of The Hinds Catchments Proposed Groundwater Replenishment Scheme. Patrick Durney , Canterbury Regional Council	That bloody pipe does leak – understanding the nuances of waded gaugings. Ian Lloyd , Golder Associates NZ Ltd
14.30 - 14.45	Bias of the Big Fella Flood - Influence of Anecdotal Floods on Mary River FFA. Luke Toombes , Aurecon	Multi-objective optimization and trade-off analysis for distributed stormwater harvesting systems. Michael Di Matteo , University Of Adelaide	Next Steps – from Pilot to Full Groundwater Replenishment Scheme based on MAR. Bob Bower , Golder Associates (NZ) Ltd	Hydrologists and hydrographers holding hands. Ben Tate , Water Technology
14.45 - 15.00	Major Floods - Random or Irregular. Greg McMahon , G M McMahon Consultants	Fundamentals for On-Site Stormwater Detention Design: Optimising Design Outcomes and Reducing Risk of Regional Effect. Rodney Ronalds , Griffith University	Managed Aquifer Recharge using a pilot to develop a Groundwater Replenishment Scheme, Poverty Bay. Clare Houlbrooke , Golder Associates (NZ) Ltd	Groundwater Age Distribution in the Wairau Aquifer – How the data led to understanding more complex mixing and flow processes Uwe Morgenstern , GNS Science
15.00 - 15.30	Afternoon Tea			

	Galaxy I	Galaxy II	Copthorne I	Copthorne II
	HYDRAULICS / BEDLOAD TRANSPORT	URBAN HYDROLOGY	WATER RESOURCES / GROUNDWATER	GROUNDWATER TRACING
Chair	Richard Measures	Annette Semadeni-Davies	Ian Lloyd	Scott Wilson
15.30 - 15.45	River Load Calculator: A novel web-based tool for annual river load estimation. Ahmed Elwan , Massey University	Non-traditional Stabilisation of a reach of Brookvale Creek in Brookvale, NSW. Brett Phillips , Cardno (nsw/ act) Pty Ltd	A Hydrochemical Survey of the Groundwater Resources of South Canterbury, New Zealand. Lee Burberry , Institute Of Environmental Science and Research (ESR)	Using transition probabilities in combination with a smoke tracer test. Catherine Moore , GNS Science
15.45 - 16.00	Modelling of bio-morphodynamics in braided rivers: applications to the Waitaki river. Guglielmo Stecca , NIWA	Testing models for simulating urban hydrology. Robin Connolly , Hydrologia	Water budget of the Heretaunga Plains. Paul White , GNS Science	Smart Aquifer Characterisation of the Hutt Valley aquifer using novel age tracers. Mike Toews , GNS Science
16.00 - 16.15	Gravel transport and aggradation in the Kauerenga River. Graham Macky , DHI	Calibrating an Urban Catchment Modelling System with a Genetic Algorithm. James Ball , UTS	Spring depletion potential in the Heretaunga Plains semiconfined aquifer zone, implications for water permit consenting. Susan Rabbitte , Lattey Group	Modelling Heat As A Groundwater Tracer In Heterogeneous Aquifers. Murray Close , ESR
16.15 - 16.30	TUFLOW GPU – Best Practice Advice for Hydrologic and Hydraulic Model Simulations. Chris Huxley , Tuflow	Changing flow regimes in the springs of Christchurch. Jenny Webster-Brown , Waterways Centre For Freshwater Management		Aggregation bias in tritium-based transit times Michael Stewart , Aquifer Dynamics & GNS Science
16.45 - 18.00	Poster Session Galaxy Rooms - Chair: Charles Pearson			
18.00 - 19.30	NZHS AGM (Millennium Galaxy I & II)		Engineers Australia Meeting “Discussion on future directions for the Australian water industry” (Copthorne I & II)	
19.30 - 21.30	Envco Young Professionals Function - Zephyr			

WEDNESDAY 30 NOVEMBER

7.30 - 8.30	Registration Desk Open			
8.30 - 9.15	Keynote Speaker: Jen Crawford - Anderson Lloyd Session Chair: Joseph Thomas Room: Galaxy I&II			
Room	Galaxy I	Galaxy II	Copthorne I	Copthorne II
	RIVER / FLOOD PROTECTION	WATER RESOURCES / GROUNDWATER / SEISMIC	WATER ALLOCATION / MANAGEMENT	KOREAN WATER RESOURCES ASSOCIATION
Chair	Peter Hill	Mike Stewart	Katherine Daniell	Joseph Thomas
9.30 - 9.45	We've got how many of these things? Rediscovery of Lost River Protection. Hamish Smith , Kiwirail	Increase in vertical permeability after the Mw7.1 Canterbury Earthquake. Helen Rutter , Aqualinc Research Ltd	Measuring Success: Horizons' Water Allocation Framework In The Rear-view Mirror. Raelene Mercer , Horizons Regional Council	Selecting Representative GCMs to Preserve Uncertainties Young-Oh Kim , Seoul National University
9.45 - 10.00	Defensive Engineering or Engineering A Defence. Greg McMahon , G M McMahon Consultants	Thresholds for earthquake-induced hydrological changes in New Zealand aquifers. Konrad Weaver , Victoria University Of Wellington	Role Of Consistent And Transparent Water Accounting Modelling For Sustainable Water Resources Management. Uttam Manandhar , Department of Environment, Land, Water and Planning	Development Of Hydro Economic Water Allocation Model. Gunhui Chung , Hoseo University
10.00 - 10.15	Comparing Design Storm Burst and Embedded Design Storm Approaches in the Narellan Creek Catchment, NSW. Brett Phillips , Cardno (nsw/act) Pty Ltd	Variables controlling the sustained groundwater level change after the Darfield Mw 7.1 earthquake. Helen Rutter , Aqualinc Research Ltd	Hydrological modelling to assist community decision making Manuherikia Catchment Water Strategy Optimisation Process. Eric Van Nieuwkerk , Golder Associates (NZ) Ltd	
10.15 - 10.45	Morning Tea			
	WATER INFRASTRUCTURE	WATER RESOURCES / GROUNDWATER	WATER RESOURCES / MANAGEMENT	CLIMATE
Chair	Dennis Jamieson	Jon Williamson	Helen Rouse	Janice Green
10.45 - 11.00		Strategies To Overcome Unavailability Of Landuse And N Loading Inputs In Groundwater Modelling. Channa Rajanayaka , Aqualinc Research	Serious Fun for Tomorrow's Catchment Managers. Carl Johnson , DHI	How big was the January 2016 Geelong storm really? A novel use of radar data. Doerte Jakob , Bureau of Meteorology
11.00 - 11.15	A multiproxy 1000-year hydroclimate reconstruction for eastern Australia, and implications for water management and infrastructure. Anna Flack , University Of Newcastle	Calibration of a complex groundwater model using modern computation techniques, example of Heretaunga Plains model. Pawel Rakowski , HBRC	Back to basics – Water inventories to implement water sharing in páramo catchments of Colombia and Ecuador. Andrew Fenemor , Landcare Research	What is the best source of precipitation forecasts for a hydrological forecasting system? A potted exploration. James Bennett , CSIRO Land & Water
11.15 - 11.30	A methodology for optimisation of mine water management infrastructure Amir Hedjripour , WSP / Parsons Brinckerhoff	Machine-Learning Based Assistance For Groundwater Model Calibration. Michael Friedel , GNS Science	The role of Integrated Continental Hydrological Model (AWRA Modelling System) to Inform Water Resources Assessment. Amgard Elmahdi , Bureau of Meteorology	Assessing the potential impacts of climate change on the Clutha catchment. Andreas Jobst , Otago University
11.30 - 11.45		Can recharge be reliably estimated through regional-scale groundwater model calibration? Matthew Knowling , GNS Science	CHES for the Grey River Catchment. Jan Dietrich , NIWA	Finding spatial climate-oceanic precursors of hydro-lake inflows: Waitaki catchment, New Zealand. Varvara Vetrova , University of Waikato

	Galaxy I	Galaxy II	Copthorne I	Copthorne II
	WATER INFRASTRUCTURE	WATER RESOURCES / GROUDWATER	WATER RESOURCES / MANAGMENT	CLIMATE
	Dennis Jamieson	Jon Williamson	Helen Rouse	Janice Green
11.45 - 12.00	Dambreak Analysis To Evaluate Downstream Hazard Potential – Several Case Studies. David Leong , Tonkin & Taylor Ltd	Using Best-Available Data for Robust Groundwater Model Development: An Example. Julian Weir , Aqualinc	UTSA Decision Support System for Burrinjuck Dam Flood Operations and Airspace Management. Ajantha Prathab , Water NSW	Design flood estimation in a warmer climate. Conrad Wasko , University of New South Wales
12.00 - 12.15	Mangorei Power Station Flood Harvesting of the Waiwhakaiho River. Michelle Hitchcock , Trustpower	Sensitivity of groundwater recharge estimates to distribution of intensities in satellite and reanalysis precipitation products Rogier Westerhoff Deltares / GNS Science	Generalized equations for rainwater tank savings under different climatic conditions: A case study for Sydney. Uendra Paudel , Swinburne University Of Technology	Evaluation of a model for disaggregating daily rainfall into hourly rainfields: the Logan-Albert case study. Yeboah Gyasi-agyei , Central Queensland University
12.15 - 13.30	Lunch			
	WATER USE EFFICIENCY / DROUGHT	WATER RESOURCES / GROUDWATER	FLOODS	CLIMATE
Chair	Trevol Daniell	John Hadfield	Robin Connolly	Graeme Horell
13.30 - 13.45	Water use efficiency and infrastructure. Dennis Jamieson , Environment Canterbury	Hawke's Bay Lysimeter Project: Installation to Data Collection - What have we learnt so far. Abigail Lovett , GNS Science	The Australian Government's role in reducing community flood risk: the National Flood Risk Information Project. Martyn Hazelwood , Geoscience Australia	Trends In Rainfall Data in New South Wales, Australia. Himadri Paul , Western Sydney University
13.45 - 14.00	The Irrigation Efficiency Dilemma. Ian McIndoe , Aqualinc Research Ltd	Methods for mapping uncertainty in modelled groundwater age. Chris Daughney , GNS Science	The state of hydrologic practice in Victoria, Australia. Anthony Ladson , Moroka Pty Ltd	Long-term Rainfall Prediction using Large Scale Climate Variables through Linear and Non-linear Methods. H.M Rasel , Swinburne University Of Technology
14.00 - 14.15	Water use efficiency – What's working and what's not: An update from a field study. M.S. Srinivasan , NIWA	Mine Pit Lake Water Level Recovery. James Domnisse , MWH	Developing a consistent floodplain risk assessment process for Tasmania. Chris White , University Of Tasmania	Relationship between Meteorological and Hydrological Drought Characteristics. Chandi Shakila Dissanayake , Rmit University
14.15 - 14.30	Lake Coleridge Power Scheme: enhancement initiatives. Lennie Palmer , Trustpower NZ Ltd	Managed Aquifer Recharge: A Multi Criteria Feasibility Assessment Tool. Dave Stafford , Pattle Delamore Partners	The future of flood hazard mapping. Mark Hooker , Greater Wellington Regional Council	Disparity between observed rainfall trends in Canterbury and climate change guidelines. Tim Kerr , Aqualinc Research Ltd
14.30 - 14.45	How low will they go? Diminishing summer flows in the Wairarapa. Mike Thompson , Greater Wellington Regional Council	Wairau Aquifer recharge pathways. Scott Wilson , Lincoln Agritech Limited	No rain recorded - why did it flood? Jon Rix , Tonkin + Taylor Ltd	Atmospheric controls on snow and ice melt on Brewster Glacier, South Westland. Jonathan Conway , Bodeker Scientific
14.45 - 15.00	Evaluation of hydrological drought severity. Sadia Rahman , Rmit University	Development of a groundwater model for a tropical eogenetic karst aquifer in Rote Island, Indonesia. Dua Klaas , Swinburne University of Technology	20-21 June 2015 major lower Whanganui flood – determination of size, frequency and other characteristics. Jon Bell , Horizons Regional Council	An improved interpolated daily climate record for New Zealand. Peter Brown , Aqualinc Research Ltd
15.00 - 15.30	Afternoon Tea			

	Galaxy I	Galaxy II	Copthorne I	Copthorne II
	WATER QUALITY	WATER RESOURCES / SURFACE WATER / GROUNDWATER	FLOODS	CLIMATE
Chair	Murray Close	Michael Stewart	Toby McGrath	MS Srinivasan
15.30 - 15.45	The seasonal dynamics of the stream source waters and flowpaths in an Austrian headwater catchment. Michael Exner-Kittridge , Environment Canterbury	Groundwater surface water interaction in the vicinity of the Blue Spring. John Hadfield , Waikato Regional Council	Flood Forecasting by scenario lookup. Richard Measures , NIWA	Chasing The Significance Of Fog Deposition In Otago's Tussock Grasslands. Sarah Mager , University Of Otago
15.45 - 16.00	Groundwater Chemistry And Residence Time In The Lower Hutt Aquifer: The Relationship To Iron Bacteria. Rob van der Raaij , GNS Science	Estimating the change in stream flow resulting from groundwater takes. Tim Kerr , Aqualinc Research Ltd	Experiences Exploring The Feasibility of Constructing a Very Large Scale 2D Flood Model Of Tasmania. Ted Rigby , Rienco Consulting	Uncertainty in future rainfall and river flows in New Zealand under changes in climate. Chris Cameron , Bodeker Scientific
16.00 - 16.15	Edaphic and Geological Controls over Redox Processes in Southland's Ground & Surface Water. Monique Beyer , Environment Southland	Long term variability of proglacial groundwater-fed hydrological systems in an area of rapid glacier retreat. Amir Levy , Lattey Civil and Precast	Assess Flooding Potential in the Vicinity of the Myponga Reservoir Area. Guna Hewa , University of South Australia	Climate change impacts on hourly precipitation across New Zealand; potential downstream impacts. Christian Zammit , NIWA
16.15 - 16.30	Groundwater microbial community assessment - can shifts in composition predict contamination? Lousie Weaver , Institute Of Environmental Science & Research (ESR) Ltd	Surface water and groundwater dynamics in the Ohau and Waikawa catchments, Horowhenua. Abby Matthews , Horizons Regional Council	Constraining the Ensemble Kalman Filter for improved streamflow forecasting. Deborah Maxwell , Victoria University of Wellington	How effective is quantile mapping for post-processing GCM ensemble forecasts. QJ Wang , CSIRO Land and Water
16.30 - 16.45	Open Discussion on the hydrological impacts of the Kaikoura earthquake sequence	Modelling Groundwater-Surface Water Balance Dynamics for Water Allocation. Blair Thornburrow , Patle Delamore Partners	A Review of Stream Gauge Records for Design Flood Estimation. James Ball , UTS	Water Balance of the Upper to Middle Niger Basin and the Impact of Climate Change. Boubacar Seydou Coulibaly , UTS
16.45 - 17.00	Discussion cont'd. The hydrological impacts of the Kaikoura earthquake sequence	Modelling surface water - groundwater interaction using a newly developed conceptual surface water-groundwater model. Jing Yang , NIWA	Approaches for a Pilot Catchment Flood Study in Qatar. Benjamin Regan , GHD Global Pty Ltd	Combined Regression Modelling of Winter Rainfall in Western Australia Using Potential Climate Indices. Vassiliki Terezinha Galvão Boulomytis , Swinburne University of Technology
17.30 - 19.00	Drinks on arrival followed by presentation of the GN Alexander Award and the Munro Oration - Blair Fitzharris Galaxy Rooms: Chair - Toby McGrath			

THURSDAY 01 DECEMBER

8.00 - 9.00	Registration Desk Open			
9.00 - 9.45	Keynote: Rory Nathan - University of Melbourne Session Chair: Mark Babister Room: Galaxy I&II			
Room	Galaxy I	Galaxy II	Copthorne I	Copthorne II
	FLOODS / DESIGN	CATCHMENT HYDROLOGY	WATER RESOURCES	WATER QUALITY / SEDIMENT
Chair	Charles Pearson	Daniel Collins	Tim Kerr	Sarah Mager
10.00 - 10.15	Interdependence of design losses and temporal patterns in design flood estimation. Melanie Loveridge , Water NSW	Uncertainty analysis of hydrologic model parameters through Monte Carlo Methods in XPRAFTS. Sophia Buchanan , XP Solutions	Investigating the challenges of water governance in Oceania. Katherine Daniell , The Australian National University	How does uncertainty in land use change influence flow and sediment projections? Bikesh Shrestha , University Of Canterbury
10.15 - 10.30	A review of the capabilities of RORBwin: an enabling tool for application of ARR2016. David Stephens , HARC	Understanding mean transit times of river water in Australian headwater catchments using tritium. Ian Cartwright , Monash University	Modelling to support water resource management of the Hakataramea catchment in South Canterbury. Mike Law , BECA Ltd	Application of daily SedNet for modelling catchment-scale sediment generation and transport: New Zealand case study. Lydia Cetin , Jacobs
10.30 - 10.45	Novel Methods for Improved Filtering of Rain on Grid Results for Flood Mapping. Elliot Jones , GHD	A modern perspective on hydrology processes of two catchments in regional Victoria. Peter Coombes , Urban Water Cycle Solutions	eWater Source as an integrated modelling tool supporting policy and management in SE Asia. Juanita Moolman , eWater Ltd	Why do suspended sediment-turbidity relationships fail? Christina Bright and Sarah Mager
10.45 - 11.15	Morning Tea			
	FLOODS / DESIGN	WATER RESOURCES / SURFACE WATER	WATER RESOURCES / SURFACE WATER / GROUNDWATER	WATER QUALITY
Chair	Mike Law	Kyle Christensen	Joseph Thomas	Chris Daughney
11.15 - 11.30	Stuck in the 1960s – the Need for Fundamental Change in Flood Hydrology in Australia. David Kemp , University Of South Australia	Regionalisation of the parameters of a rainfall runoff model: A case study adopting Australian Water Balance Model. Ataur Rahman , Western Sydney University	An evaluation of analytical stream to groundwater exchange models based on spatial flow assumptions. Michael Exner-Kittridge , Environment Canterbury	Nutrient Variability Over Short Time Scales in Pristine Alpine Catchments. Emily Diack , Williamson Water Advisory
11.30 - 11.45	ARR Blockage: Numerical Implementation and Three Case Studies. Paul Ollett , Hydralinc Pty Ltd	Estimating the incremental increase in inflows due to cloud seeding over the Australian Snowy Mountains. James Pirozzi , Snowy Hydro	Modelling groundwater – surface water interactions with the Double-Averaged Navier-Stokes Equations. Andrew Dark , Aqualinc Research Ltd	Investigation of nitrogen loads and transport pathways in the Kaiapoi River catchment. Zeb Etheridge , Environment Canterbury
11.45 - 12.00	Blockage is random! A probabilistic framework to estimate blockage factors for design flood modelling. Rhys Hardwick-Jones , WMAwater	Accounting for water at a national level. Janice Green , Bureau Of Meteorology	Changes in the hydrological regime of the Wairau Plains Aquifer. Thomas Wöhling , Technische Universität Dresden / Lincoln Agritech Ltd.	Investigating nutrient pathways in groundwater to meet community expectations. Marta Scott , Environment Canterbury
12.00 - 12.15	Flood frequency models of New Zealand: Past, present and future. Daniel Collins , NIWA	Impact of spatial and temporal averages on prediction of water security using systems analysis. Peter Coombes , Urban Water Cycle Solutions	Using three dimensional groundwater flow models for major infrastructure projects: from consenting to construction. Dora Avaniidou , BECA	Modelling the impact of Denitrification on N removal in the Reporoa catchment. Murray Close , ESR

	Galaxy I	Galaxy II	Copthorne I	Copthorne II
	FLOODS / DESIGN cont..	WATER RESOURCES / SURFACE cont..	WATER RESOURCES / SURFACE WATER / GROUNDWATER cont..	WATER QUALITY cont..
	Mike Law	Kyle Christensen	Joseph Thomas	Chris Daughney
12.15 - 12.30	Efficacy of a storm-based Monte Carlo approach in modelling flood volumes. Melanie Loveridge , Water NSW	Using Calibration Strategies to Emulate a Complex River Basin Model with a Simplified Fit-For-Purpose Model. Rebecca Borwell , University Of Newcastle	Towards collaborative groundwater – surface water interaction models from catchment to regional and national scales. Christian Zammit , NIWA	Low-gradient streams need more flow for oxygen. Thomas Wilding , Hawke's Bay Regional Council
12.30 - 12.45	Incorporation of snowmelt into joint probability event based rainfall-runoff modelling. David Stephens , HARC	SUMMA time in the Waikato – Rainfallrunoff modelling in ungauged catchments. Bevan Jenkins , Waikato Regional Council	Assessing Groundwater and Surface Water interactions in Sukhuma District, Champasak Province, Southern Laos. Sinxay Vongphachanh , University Of Technology Sydney	Stratification of groundwater age and quality at Lake Taupo from Push-drill tests. Uwe Morgenstern , GNS Science
12.45 - 13.30	Lunch + Rivers Group AGM			
	FLOODS / DESIGN	WATER RESOURCES / SURFACE WATER	WATER RESOURCES / MANAGEMENT	WATER QUALITY
Chair	Roddy Henderson	Mike Thompson	Helen Shaw	Catherine Moore
13.30 - 13.45	Deriving Temporal Patterns for Areal Rainfall Bursts. Scott Podger , WMAwater	Bayesian Calibration Of A Lumped Model To Estimate Catchment Nitrate Fluxes From Monthly Monitoring Data. Simon Woodward , Lincoln Agritech Limited	New approaches to water management in Otago. Peter Wilson , Otago Fish And Game Council	Sedimentary anisotropy and its effects on solute mixing in groundwater. Jeremy Bennett , University of Tübingen
13.45 - 14.00	Estimation of Plotting Position for Flood Frequency Analysis. Rob Connell , Independent Researcher	Streamflow Forecasting Based on Ensemble Streamflow Prediction Technique: A Case Study in New Zealand. Shailesh Kumar Singh , NIWA	Scenario Planning As A Tool For Integrated, Collaborative Freshwater Management Decision Making. Helen Rouse , NIWA	Geochemical modeling of electron donors involved in denitrification in the Lake Taupo catchment. Scott Korom , Barr Engineering Company
14.00 - 14.15	Application of ARR FLIKE for At-site Flood Frequency Analysis in New South Wales, Australia. Himadri Paul , Western Sydney University	Water resources opportunities from near real time national soil moisture assessment. Adam Smith , Bureau Of Meteorology	Using leading-edge research to inform freshwater management policies: example of the Southland region, NZ. Magali Moreau , GNS Science	Automated detection of (missing) buffer stripes surrounding rivers in the Mondsee catchment. Hermann Klug , University Of Salzburg
14.15 - 14.30	Regional Flood Modelling in Tasmania: Comparison of ARR RFFE Model and Kriging. Ataur Rahman , Western Sydney University		Strategic Water Resource Planning using eWater Source in Port Macquarie, Australia. Mahala McLindin and Andrew Herron , Jacobs	Spatial prediction of groundwater redox status. Scott Wilson , Lincoln Agritech Limited
14.30 - 14.45	KiwiRail Main South Line – Bridge 190 Shag River Hydraulic Assessment. Daniel McMullan , Opus International Consultants Ltd	Hydrological applications of Australian and New Zealand atmospheric reanalysis. Adam Smith , Bureau Of Meteorology	Understanding the value of reconstructing environmental history of reservoirs for improved water supply management. Neeraj Mall , Federation University Australia	Parameterisation and simulation of the SMWBM within the Source catchment model. Jon Williamson , Williamson Water Advisory

	Galaxy I	Galaxy II	Copthorne I	Copthorne II
	FLOODS / DESIGN cont..	WATER RESOURCES / SURFACE WATER cont..	WATER RESOURCES / MANAGEMENT cont..	WATER QUALITY cont..
	Roddy Henderson	Mike Thompson	Helen Shaw	Catherine Moore
14.45 - 15.00	Application of rainfall-run-off modelling to large catchments: flood estimates for the Swan-Avon River David Stephens , HARC	Assessment of AWAP large-scale hydrological model to detect influence of climate drivers on runoff variability. Lanying Zhang , University Of Newcastle	Satellite Remote Sensing For Water Resources Management and Groundwater Modelling In the Waimakariri Zone. Fouad Alkhaier , Environment Canterbury	The practicalities of managing catchments to fixed nutrient limits: a case study from the Hurunui. Peter Brown , Aqualinc Research Ltd
15.00 - 15.15	Standardising hydrological modelling for the Wellington region (Wellington's own TP108). Charlotte Lockyer , Cardno	Development and calibration of HEC-RAS model for the Juqueriquerê river basin in São Paulo, Brazil. Vassiliki Terezinha Galvão Boulomytis , Swinburne University of Technology	Policy responses to the identification by Maori of flows necessary to maintain their cultural values. Gail Tipa , Tipa and Associates Ltd	National Sea Outfall Assessment in Qatar: Opportunities and Challenges. Abdullah Al Mamoon , Ministry Of Municipality And Environment
15.15 - 15.45	Afternoon Tea			
	FORECASTING	WATER RESOURCES / MODELLING	WATER RESOURCES / GROUNDWATER	WATER QUALITY
Chair	Fiona Ling	Jan Dietrich	Abigail Lovett	Michael Exner-Kittridge
15.45 - 16.00	Operational flood forecasting with a bias corrected high resolution weather forecast. Celine Cattoen-Gilbert , NIWA	Hydrological analysis: are we modelling or muddling? Earl Bardsley , University Of Waikato	Conceptual model of groundwater movement through the Ohau and Waikawa groundwater catchments. Neil Thomas , Pattle Delamore Partners	Building wider engagement through creative interfaces to water quality models developed in Source. Phillip Jordan Hydrology And Risk Consulting Pty Ltd
16.00 - 16.15	Real-Time Flood Forecasting – You Probably Already Have What You Need. Cameron Drurey , WorleyParsons	Hydraulic modelling to inform physical constraints on environmental flows in the Gwydir floodplain. Monika Balicki , Water Modelling Solutions	Sam and Decision Crash Testing Models. Catherine Moore , GNS Science	Improving aquatic community health with the help of big data bedload transport studies. Andrew Neverman , Massey University
16.15 - 16.30	Stochastic updating for ensemble hydrological forecasting. QJ Wang , CSIRO Land and Water	Waipaoa River Catchment Modelling, Gisborne. James Blyth , Jacobs	Modeling and calibration of groundwater flow for Qatar aquifer. Husam Baalousha , Qatar Environment And Energy Research Institute (QEERI)	Kopeopeo Canal Remediation - Community Engagement and Dredging Trial. Ken Tarboton , Aqueous Consulting
16.30 - 16.45	Quantifying total uncertainty in short-term streamflow forecasts through pre & post-processing. James Bennett , CSIRO Land & Water	A national pressure-state-impact model for freshwater flows. Doug Booker , NIWA	An integrated catchment modelling approach to set and review New Zealand water and nutrient policies. Andrew Herron , Eco Logical Australia	Real-time measuring and modelling phosphorus runoff using SWAT and AGNPS. Hermann Klug , University Of Salzburg
16.45 - 17.00	Forecasting the Hutt. Greg Whyte , DHI Water & Environment	Modelling to support planning, in a lowflow, rapidly developing environment in Western Australia. Stephan Suter , DHI Water & Environment		Physiographic Controls over Southland's Ground & Surface Water Chemistry – Lessons Learnt. Clint Rissman , Environment Southland
17.00	Conference Close			
18.00	Buses depart from Millennium for Conference Dinner - Skyline Gondola			

FRIDAY 2 DECEMBER

Field Trips