

Tuesday 12th December 2006

4.00pm - 6.00pm

Colley Room 1

4.00pm - 6.00pm

Welcome Drinks and Early Registration, MC Trevor Pillar

Wednesday 13th December 2006

8.00 am - 11.10am

8.00am - 9.00am

Registration /Tea & Coffee

Ballroom 4

9.00am

Conference Opening
Professor Craig Simmons

9.00am - 9.40am

Keynote Session 1

Chair: Professor Craig Simmons

Keynote Address

**Paradigms, Potholes and Power Laws: Exploring the Organization
of Hydrologic Systems**

Professor Frank W. Schwartz

The Ohio State University

Ballroom 4

Hydrogeology Session H1:1

Session Title: Surface Water-Groundwater Interaction

Chair: Dr Jeff Turner

9.40am - 10.00am

Quantifying Groundwater Discharge to Streams using Radon
Peter G. Cook

10.00am - 10.20am

Hydrochemical Variations in Cleared and Pristine Catchments on Kangaroo
Island: Implications for Sub-Surface Flow and Streamflow Generation
Paul Shand

10.20am - 10.40am

Preliminary Investigations of Surface-Water Groundwater Interactions in
the Maules Creek Catchment, Namoi Valley, NSW, Australia
Martin S. Andersen

Ballroom 5

Isotope Session I1:1

Session Title: Developments in Isotope Hydrology

Chair: Assoc. Professor Ian Cartwright

Constraining Evaporative Loss from an Arid, Ungauged Ephemeral Lakes
System
Elizabeth C. Irvine

An Isotopic Approach to Hydrological Mass Balance in the Nattai River
Catchment, NSW: Rainfall - Runoff and $\delta^{18}\text{O}$, $\delta^2\text{H}$
Christopher L. Waring

Isotope Hydrology of the Great Artesian Basin, Australia
M. A. (Rien) Habermehl

10.40am -11.10am

Morning Tea in Foyer (Sponsored by FR3cE)

Wednesday 13th December 2006

11.10am - 1.30pm

Ballroom 4		Ballroom 5
Hydrogeology Session H1:2 Session Title: Surface Water-Groundwater Interaction Chair: Dr Peter Cook		Isotope Session I1:2 Session Title: Isotope Application in Ecological Studies Chair: Fred Leaney
11.10am - 11.30am	CO ₂ Mound Springs of the Western U.S.: Towards a Model for Continental Smokers? <i>Laura J. Crossey</i>	Extreme Carbon Isotope Enrichment in Lacustrine Sediments <i>Chris Hendy</i>
11.30am - 11.50am	Developing an Ecologically Sustainable Water Resource Budget for a Riparian Wetland in Tasmania <i>Christopher J. Bobbi</i>	Analysis of Fish Diet from the Murray Estuary Using C, N and S Stable Isotopes <i>Sébastien Lamontagne</i>
11.50am - 12.10pm	Isotopic Constraints on Groundwater - Surface Water Interactions in the Upper Glenelg River, Western Victoria <i>John Webb</i>	Trophic Change in Riverland (SA) Wetlands: C & N in the Sediments of Pike River and Ral Ral Creek <i>Hossain Shahid Siddiqui</i>
12.10pm - 12.30pm	GDE's of the GAB, Not Just Another TLA <i>Travis B. Gotch</i>	Trace Elements and Light Isotopes to Couple Foods and Beverages to their Growing Environment <i>G. Stewart Walker</i>
12.30pm - 1.30pm	Lunch in Foyer	

Wednesday 13th December 2006

1.30pm - 3.40pm

1.30pm - 2.10pm	Ballroom 4
	Keynote Session 2
	Chair: Dr Evelyn Krull
	<p>Keynote Address Pennies from Heaven - Cosmogenic Radioisotopes Here, There and Everywhere <i>Dr David Fink</i> ANSTO</p>

Ballroom 4		Ballroom 5
	<p>Hydrogeology Session H1:3 Session Title: Modeling and Quantitative Hydrogeology Chair: Professor Ling Li</p>	<p>Isotope Session I1:3 Session Title: Regolith and Landscape Studies Chair: Dr Sébastien Lamontagne</p>
2.10pm - 2.30pm	<p>Pre-conditioned Monte-Carlo Simulation Using a Calibrated Flow Model and Value-Noise Stochastic K-fields <i>Frans R. P. Kalf</i></p>	<p>The Source of Calcium in Regolith Carbonates of Australia and the Implications to the Global Carbon Cycle <i>Robert C. Dart</i></p>
2.30pm - 2.50pm	<p>Evaluating Clumping in Data Using a Gaussian Smoothing Approach <i>Richard G. Cresswell</i></p>	<p>Isotopically light meltwater from Scandinavian Ice Sheet in the Cambrian-Vendian Aquifer System in Northern Estonia <i>Rein Vaikmae</i></p>
2.50pm - 3.10pm	<p>Temporal Variations in Soil Water Fluxes to a Shallow Water Table Under Irrigated Horticultural Land <i>Graham P. Green</i></p>	<p>The Gulf of Carpentaria, Australia, at ~70 ka: Isotopic, Trace and REE Constraints <i>Dioni I. Cendon</i></p>
3.10pm - 3.40pm	Afternoon Tea in Foyer	

Wednesday 13th December 2006

3.40pm - 7.00pm

Ballroom 4		Ballroom 5
	Hydrogeology Session H1:4 Session Title: Sustainable Groundwater Use Chair: Dr Peter Dillon	Isotope Session I1:4 Session Title: New Methods in Isotope Analysis Chair: Assoc. Professor Kliti Grice
3.40pm - 4.00pm	Modelling the Dynamic Behaviour of a Stressed Freshwater Lens <i>Narayana M. Somartne</i>	Further Developments of the Oxygen Isotopic Analysis of Plant Water Using Equilibration with Carbon Dioxide <i>Hilary Le Q. Stuart-Williams</i>
4.00pm - 4.20pm	Hydrogeochemical and Isotopic Investigation of a Potential Bore Field: Upper Nepean Catchment <i>Wendy McLean</i>	Measuring Gross N Mineralisation in Soils: Can ¹⁵ N Isotopic Dilution Tell the Same Story as ¹⁵ N Isotopic Enrichment? <i>Kris Broos</i>
4.20pm - 4.40pm	Modelling ASR: When Should We Consider Density Effects? <i>James D. Ward</i>	A Rapid Field Extraction Method for Determination of Radon-222 in Natural Waters by Liquid Scintillation Counting <i>Fred W. Leaney</i>
4.40pm - 5.00pm	Dynamics of Flow and Solute Transport During Aquifer Storage and Recovery at the Bolivar Trial Site <i>Paul Pavelic</i>	
6.00pm - 7.00pm	Poster Session and Happy Hour	

Thursday 14th December 2006

8.00 am - 11.10am

8.00am - 9.00am	Tea & Coffee in Foyer	
9.00am - 9.40am	Ballroom 4	
	Keynote Session 3	
	Chair: Dr Evelyn Krull	
	<p style="text-align: center;">Keynote Address Biogeochemical Cycling of Sulfur, Carbon, and Hydrogen across the Permian-Triassic (P-Tr) Boundary: A Biomarker and Compound Specific Isotope Approach <i>Associate Professor Kliti Grice</i> Curtin University</p>	
9.40am - 10.00am	Ballroom 4	
	Hydrogeology Session H2:1 Session Title: Catchment Hydrogeology and Case Studies Chair: Professor Frank Schwartz	
	Major Ion Chemistry of Rivers Draining the Australian Victorian Alps (SE-Australia): Constraints on Chemical Weathering and its Dependence on Lithologic, Climatic and Anthropogenic Influences <i>K. Benjamin Hagedorn</i>	Ballroom 5
	Isotope Session I2:1 Session Title: Compound Specific and Multi-Isotopic Analyses Chair: Dr Rien Habermehl	
10.00am - 10.20am	Using Water Balance Estimation to Support Water Management During Urbanisation of the Southern River catchment, Western Australia <i>Olga Barron</i>	Dynamics of N ₂ O- ¹⁵ N in Groundwater at the Aquatic-Terrestrial Interface <i>Tim J. Clough</i>
10.20am - 10.40am	Determining Groundwater Age and Aquifer Flow Characteristics in Fractured Rock Aquifers, Mount Lofty Ranges, South Australia <i>Eddie W. Banks</i>	Assessing the Importance of Microphytobenthos Using Compound-Specific Stable Isotope Analysis of Phytol <i>Andrew T. Revill</i>
10.40am -11.10am	Morning Tea in Foyer (Sponsored by Isotrace & Sercon)	

Thursday 14th December 2006

11.10am - 1.30pm

Ballroom 4		Ballroom 5
Hydrogeology Session H2:2		Isotope Session I2:2
Session Title: Coastal Hydrogeology and Seawater Intrusion		Session Title: Contamination and Land Management Change
Chair: Assoc. Professor David Lockington		Chair: Dr David Fink
11.10am - 11.30am	Groundwater Extraction and Saline Intrusion in a Coastal Limestone Aquifer <i>Angela L. Bush</i>	Stable Carbon Isotopic and ¹³ C-NMR Analysis of Fitzroy Estuary Sediments <i>Evelyn Krull</i>
11.30am - 11.50am	Questioning the Validity of Seawater Intrusion Modelling at the Regional Scale <i>Adrian D. Werner</i>	Detecting Changing Landuse at Porirua Harbour-Pauahatanui Estuary Using Stable Carbon and Nitrogen Isotopes and Heavy Metals <i>Karyne M. Rogers</i>
11.50am - 12.10pm	Hydrogeochemical Evolution and Isotopic Character of Groundwater within a Semi-Confined Coastal Paleovalley, Elimbah, Southeast Queensland <i>Malcolm E Cox</i>	Variations in Stable Sulfur Isotopes in Acid Sulfate Soil Materials <i>Crystal A. Maher</i>
12.10pm - 12.30pm	Tidal Dynamics in a Subterranean Estuary <i>Ling Li</i>	Nutrient Loading to Adelaide Coastal Waters: The Seagrass Record <i>Milena Fernandes</i>
12.30pm - 1.30pm	Lunch in Foyer	

Thursday 14th December 2006

1.30pm - 3.40pm

Ballroom 4		
1.30pm - 2.10pm	Keynote Session 4	
	Chair: Dr Andrew Love	
	Keynote Address Isotope Hydrology at the International Atomic Energy Agency <i>Dr Andrew Herczeg</i> CSIRO Land and Water	
Ballroom 4		Ballroom 5
	Hydrogeology Session H2:3	Isotope Session I2:3
	Session Title: Surface Water-Groundwater Interaction Chair: Assoc. Professor Malcolm Cox	Session Title: Integrated Hydrogeology and Isotope Studies Chair: Dr Paul Shand
2.10pm - 2.30pm	The Combined Use of Seepage Meters and Radon-222 to Quantify Groundwater Fluxes in a Wetland <i>Cameron Wood</i>	Groundwater-Surface Water Interaction in the Lower Burdekin Wetlands: Preliminary Results of a Hydrological and Hydrochemical Field Investigation, Analysis of $\delta^{18}\text{O}$, $\delta^2\text{H}$ and ^{222}Rn Sampling <i>Gerard A. McMahon</i>
2.30pm - 2.50pm	A Water, Solute and Isotope Mass Balance Toolkit for Analysis of Groundwater Connectedness of Shallow Lakes and Wetlands <i>Jeffrey V. Turner</i>	An Isotopic Approach to Hydrological Mass Balance in the Nattai River Catchment (SE, NSW): Rain, Groundwater, and Stream Sulphate ^{35}S , $\delta^{34}\text{S}$, $\delta^{18}\text{O}$, $\Delta^{17}\text{O}$ <i>Christopher L. Waring</i>
2.50pm - 3.10pm	Tracing Sources of Water to an Alluvial Aquifer Using Radon-222 <i>Jodie L. Pritchard</i>	Application of Environmental Isotopes to Understand Groundwater Flow Mechanisms in the Basalt Plains of Western Victoria, Australia <i>Matthias Raiber</i>
3.10pm - 3.40pm	Afternoon Tea in Foyer	

Thursday 14th December 2006

3.40pm - 11.30pm

Ballroom 4		Ballroom 5
	Hydrogeology Session H2:4 Session Title: Catchment Hydrogeology and Case Studies Chair: Dr Adrian Werner	Isotope Session I2:4 Session Title: Regolith and Landscape Studies Chair: Dr Andrew Herczeg
3.40pm - 4.00pm	Decision Support System for Sustainable Watershed Management: A Case Study in Raisen District of Madhya Pradesh in Central India <i>D Singh Saini</i>	The Genesis, Age and Palaeoenvironments of the Black Creek Swamp Megafaunal Fossil Deposit, Kangaroo Island <i>Matthew S. Forbes</i>
4.00pm - 4.20pm	Geophysical and Hydrogeological Signatures of Palaeovalley Sediments - A Case Study from Tanami Region, Northern Territory, Australia <i>Graham Heinson</i>	Tracing the Origin of Uranium in Bone and Teeth Using Strontium Isotopes (Rocky River Megafauna Site, Kangaroo Island, South Australia) <i>Erick A. Bestland</i>
4.20pm - 4.40pm	Climate Change and Urban Groundwater Recharge <i>Anthony J. Dean</i>	Sr Isotopes in Groundwater from the Murray Basin, Australia <i>Ian Cartwright</i>
4.40pm - 5.00pm	The Application of Time Series Techniques to Groundwater Level and Climate Relationships <i>Mobashwera Kabir</i>	
5.00pm -5.20pm	Do Irrigation Regions need a Salt Balance? <i>Thabo Thayalakumaran</i>	
7.00pm - 11.30pm	Conference Dinner MC Dr Andrew Love Ballrooms 4 & 5, Stamford Grand Hotel 7pm Drinks for 7.30pm Dinner	

Friday 15th December 2006

8.00 am - 11.10am

8.00am - 9.00am	Tea & Coffee
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9.00am - 9.40am	Ballroom 4
	Keynote Session 5
	Chair: Professor Craig Simmons Keynote Address Meeting Australia's Water Challenge: Minimising Risk and Uncertainty <i>Dr Tom Hatton</i> CSIRO Land and Water

	Ballroom 4	Ballroom 5
	Hydrogeology Session H3:1 Session Title: Innovative Field and Laboratory Techniques Chair: Professor Ian Acworth	Isotope Session I3:1 Session Title: Integrated Hydrogeology and Isotope Studies Chair: Dr Tom Hatton
9.40am - 10.00am	Chromatographic Separation of Solutes in a Clay-Rich Aquitard due to Cation Exchange during Salinisation <i>Wendy A. Timms</i>	Historical Pollution and Remediation Efforts in the Upper Catchment of the Tonalli River (NSW) Australia <i>Henk Heijnis</i>
10.00am - 10.20am	Laboratory Study on the Impact of Nitrogen Limitation on Biological Clogging of Porous Homogeneous Media <i>Martin Wood</i>	Use of Environmental Tracers to Better Understand Groundwater Recharge/Discharge Processes, Ranger Uranium Mine, NT <i>Alan A. Puhlovich</i>
10.20am - 10.40am	Using Dipole Tracer Tests to Predict Solute Transport in Fractured Rock <i>Douglas Weatherill</i>	Environmental Isotope Study to Characterise Groundwater Flow Regime in a Post Karoo Age Graben Structure to Augment Water Supplies to Rural Communities in the Limpopo Province, South Africa <i>E Van Wyk</i>

10.40am -11.10am	Morning Tea in Foyer
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Friday 15th December 2006

11.10am - 2.00pm

Ballroom 4	
11.10am - 11.50am	Keynote Session 6
	Chair: Dr Andrew Love
	Keynote Address Integration of Field-Scale Hydrogeochemical Processes by Reactive Transport Modeling <i>Dr Henning Prommer</i> CSIRO Land and Water

Ballroom 4		Ballroom 5
	Hydrogeology Session H3:2 Session Title: Hydrogeologic Case Studies Chair: Dr Gerard McMahon	Isotope Session I3:2 Session Title: Integrated Hydrogeology and Isotope Studies Chair: Dr Paul Pavelic
11.50am - 12.10pm	Measurement of Hydraulic Conductivity, Porosity and Lithology by Neutron Activation Borehole Logging at High Spatial Resolution Increments <i>Christopher L. Waring</i>	Isotope Geochemistry of Hodgson Creek Catchment, Queensland Murray-Darling Basin <i>Richard G. Cresswell</i>
12.10pm - 12.30pm	Understanding the Groundwater Recharge Process near the Ranger Mine in the Northern Territory <i>Mobashwera Kabir</i>	Isotopic Constraints on Groundwater - Surface Water Interactions in the Upper Glenelg River, Western Victoria <i>John Webb</i>
12.30pm - 12.50pm	Geological Controls on Regional Groundwater Flow and Mine Development <i>Katarina David</i>	Multi-tracer Approach to Constrain Travel Times in a Karstic Aquifer <i>Joanne L. Vanderzalm</i>

12.50pm - 1.00pm	Conference Close and Awards Dr Evelyn Krull
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1.00pm - 2.00pm	Lunch in Foyer
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