



The International Association of Hydrological Sciences (IAHS)
The International Commission on Continental Erosion (ICCE)

International Symposium on
‘Sediment dynamics in changing environments’

1st – 5th December 2008

Christchurch, New Zealand

THIRD CIRCULAR

Registration and Programme

We cordially invite you to register to the international symposium

‘Sediment dynamics in changing environments’,

to be held in Christchurch, New Zealand, 1st – 5th December 2008.

Details about registration can be found on the Symposium Webpage:

Early bird deadline for registration

27 October 2008

Symposium Webpage

<http://www.civil.canterbury.ac.nz/icce2008/>

National Institute of Water and Atmospheric Research (NIWA)

www.niwa.co.nz



Landcare Research

www.landcareresearch.co.nz



Manaaki Whenua
Landcare Research

University of Canterbury

www.canterbury.ac.nz





Venue & Contacts

The Symposium will be hosted at University of Canterbury Campus. The University is located in the heart of the suburb Ilam approximately 4 km west of the City Centre. Excellent facilities surround the area and direct bus transport links to the City Centre. A wide range of accommodation option exists nearby to meet most budgets. Details and maps of the conference venue will be available from the Symposium webpage.

The mid-Symposium field trip will take us to the gravel bed rivers of the Canterbury Plains which act as a conveyor belt transporting sediment out of the uplifting Southern Alps into the Pacific Ocean. Several evening events are included in the conference programme, including an Ice-Breaker reception and a Conference Dinner.

Christchurch is New Zealand's Garden City. Christchurch is a great starting point to explore the famous New Zealand Alps, the West Coast, and Central Otago with its stunning scenery and wineries – to name only a few options. Christchurch is the South Island communications and transport hub and can be reached by road, rail or by air (International airport 10 km from City Centre).

Local organising committee

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Looking forward to seeing you in Christchurch!



Christchurch Tram



Christchurch Cathedral



Lyttleton Harbour



Keynote Speakers

Professor Andreas Lang

Andreas Lang is Chair of Physical Geography and Head of the Department of Geography, University of Liverpool, UK. His recent research focuses on: application of optical dating to sediments from fluvial and colluvial environments, reconstructing human impact on geomorphic systems; longer term changes in sediment flux and catchment transmission and modelling fluvial systems.



Professor Michael Crozier

Michael Crozier has a personal chair in Geomorphology at Victoria University of Wellington, New Zealand. He is a ministerial appointment to the New Zealand Conservation Authority that has statutory responsibilities for national parks and regional conservation management strategies. While much of his research has been on the role of climate in landslide initiation, recent work has involved, earthquake-triggered landslides, response of slopes to deforestation, runout behaviour of landslides, scarp evolution, natural hazard risk evolution, and the relationship between subsurface erosion, slope hydrology and landslides.



Professor Des Walling

Des Walling is a Hydrologist with particular interests in the field of erosion and sediment yields and catchment sediment budgets. He is Reardon Smith Professor of Geography at the University of Exeter, UK. Des is heavily involved in national and international scientific activities. He is currently President of the World Association for Sediment and Erosion Research, past President of the International Commission on Continental Erosion (ICCE) and the International Association of Sediment Water Sciences (IASWS) and President of the World Association for Sediment and Erosion Research (WASER) and Honorary President of the International Association of Hydrological Sciences.



http://www.sogaer.ex.ac.uk/geography/people/staff/d_walling/main.shtml

Dr. James P.M. Syvitski

James Syvitski is Executive Director of CSDMS, a research group of the University of Colorado, specializing in building models for global change and environmental science, earth surface processes and extreme environments. His fields of expertise are in earth system science, in the fields of sedimentology, oceanography, mathematics, geophysics, geochemistry, landscape evolution and sediment transport modelling. James has worked at a variety of levels in world scientific bodies (IUGS, IGBP, INQUA, and IAS). He enjoys simplifying science for others and believes in educating the public on science issues.



<http://instaar.colorado.edu/people/bios/syvitski.html>

Dr. Murray Hicks

Murray Hicks researches and consults on river and coastal sedimentation and geomorphic processes. Murray works for the National Institute of Water and Atmospheric Research (NIWA), New Zealand. His current research focuses on numerical morphodynamic modelling of gravel-bed rivers and gravel coastlines, with application to predicting the downstream effects of dams, diversions, flood-harvesting, irrigation water abstractions and climate change on river morphology and substrate and on coastal erosion.





Scientific Themes

To understand **sedimentary systems in changing environments**, we need to advance our knowledge of sedimentary processes and systems and in particular of **scaling issues in sedimentary systems**. This knowledge, derived from **historical information and analysis**, and system analysis and modelling should enhance our ability to assess impacts of **Global Change on erosional systems**. Finally we need to find ways to link our understanding and our models of **sedimentary systems with impacts on human environments** – including improvement of management options, hazard and risk assessment, and feedback into policy frameworks. The Scientific Programme will be organised around four themes.

1. Scaling issues in sedimentary systems – from point to continents

We invite papers tackling problems of understanding and scaling erosion, transport, and deposition processes within sedimentary systems, including

- Transfer of local process understanding to larger scale systems;
- Global changes and their local effects;
- Coupling and decoupling of erosional processes on different scales;
- Complex system behaviour and changes in system states;
- Temporal scales in sedimentary systems – extreme events vs. long-term changes.

2. Dating and source tracing technologies.

This session will explore the utility of dating sediment sinks such as floodplain profiles, lake, and coastal-shelf sequences to reconstruct long-term catchment erosion and sediment yield histories. Also studies on source tracing / fingerprinting for understanding catchment sediment generation and dispersal are invited.

3. Global Change and erosion.

Papers are invited on the effects of climate and land-use changes on erosion and sedimentation processes, including

- Global erosion as affected by climate change;
- Relative importance of land-use and climate change for sedimentary systems;
- Sensitivity of sedimentary systems in different environments;
- Erosion and the carbon cycle.

4. Linking Erosion with environmental and societal impacts: Sediment production, River Regulations, Depositional environments, Hazards & Risks, Management & Policy.

Political and environmental management agendas often move in advance of the science base. It is critical to improve linkages between science outcomes and decision making on various levels. We invite papers on linking sedimentary systems with socio-economic systems, including

- Sediment production and its impacts on societies;
- Sedimentary systems and catchment management;
- Sedimentary systems and environmental hazards and risks;
- Erosion and risk mitigation;
- Developing tools to meet policy targets in areas such as erosion, transfer of sediment-associated contaminants;
- Bridging the gap between research and practice for delivery of improved strategies for sustainable development.



Conference Programme

The **IAHS ICCE Symposium** will be held in conjunction with **the Open LUCIFS Workshop**, see

http://web.uni-frankfurt.de/fb11/ipg/lucifs/LUCIFS_Workshop2008_2nd_Circular.pdf

Programme Overview

Dates	Academic Programme	Social Programme
IAHS ICCE Symposium Christchurch 1st - 5th December 2008		
Sunday (November 30 th)	Arrival/Registration	
Monday (December 1 st)	Registration / Full-day papers	Ice-breaker
Tuesday (December 2 nd)	Full-day papers	ICCE Plenary meeting
Wednesday (December 3 rd)	<i>Field trip led by Murray Hicks</i>	
Thursday (December 4 th)	Full-day papers	Conference Dinner
Friday (December 5 th)	Full-day papers	
IGBP-PAGES LUCIFS open workshop (Programme)		
Saturday / Sunday (December 8 th - 11 th)	<i>LUCIFS Field trip</i> LUCIFS full-day papers	

Preliminary **Speakers Programme** can be found overleaf

Sun, 30 th Nov	Mon, 1 st December	Tue, 2 nd December	Wed, 3 rd December	Thu, 4 th December	Fri, 5 th December
	0800 Registration 0830- Jochen Schmidt et al. 0900 Welcome	0830- <i>Session Processes & Scales II</i> 1020 Chair: Arthur Horowitz	0800 Coffee	0830- <i>Session Global Change & Erosion III</i> 1020 Chair: Martin Thoms	0830- <i>Session Management IV</i> 1020 Chair: Wayne Erskine
	0900- <i>Session Unlocking the archives I</i> 1020 Chair: Jim Bogen	0830 Keynote James Syvitski Scaling Sediment Flux across Landscapes	0830 Keynote Bryan Jenkins CEO, ECAN	0830 Keynote Des Walling The changing sediment loads of the world's rivers	0830 Keynote Michael Crozier Linking erosion with environmental and societal impacts in a rapidly changing environment
	0900 Keynote Andreas Lang Recent advances in dating and source tracing of fluvial deposits	0910 Andrew Whitaker Changing suspended sediment dynamics due to extreme flood events in a small pluvial-nival system in northern Japan		0910 Yoav Avni Glacial – interglacial cycles, soil erosion and natural desertification in the Middle-East	0910 Annabelle Keene Reformation of pool-riffle sequences and induced bed armouring in a sand-bed stream following river rehabilitation
	0940 Martin Thoms Sources and dispersal of sediment within a large floodplain complex	0930 Jacky Croke The effect of local scale valley constrictions on flood inundation and catchment-scale sediment delivery in the Fitzroy river basin, Australia		0930 Irina Overeem Changing sediment supply in Arctic river systems	0930 Jon Williams Towards Improving the Prediction of Longshore Sediment Transport
	1000 Vladimir Belyaev Combining direct observations, modelling, and 137Cs tracers for evaluating individual event contribution to long-term sediment budgets	0950 Akira Matsuoka Sediment yield from the seismically-disturbed mountainous watersheds revealed by the multi-temporal aerial LiDAR surveys	1000 Murray Hicks Field Trip Canterbury Plains & Foot Hills	0950 Jim Bogen The impact of climate change on glacial sediment delivery to rivers	0950 Emil Goelz Improved sediment-management strategies for the sustainable development of German waterways
	1020- Morning tea 1100	1020- Morning tea 1100		1020- Morning tea 1100	1020- Morning tea 1100
	1100- <i>Session Processes & Scales I</i> 1230 Chair: Sandy Elliott	1100- <i>Session Global Change & Erosion II</i> 1300 Special Waipaoa session Chair: James Syvitski		1100- <i>Session Management III</i> 1230 Chair: Michael Crozier	1100- <i>Session Unlocking the archives IV</i> 1230 Chair: Andreas Lang
	1100 Eduardo E. de Figueiredo Sediment yield modelling at micro-basins and basin scales in semiarid regions of Brazil	1100 Nicola Litchfield The Waipaoa Sedimentary System: research review and future directions		1100 Malcolm Green Predicting decadal-scale estuarine sedimentation for planning catchment development	1100 Scott Rayburg Identifying relationships between flood history, flood frequency and the provenance of surface sediments in a semi-arid terminal wetland
	1120 Sagy Cohen Soil armouring and weathering: toward catchment scale computational modelling	1120 Chris Phillips Recurrent displacement of a forested earthflow and implications for forest management, East Coast Region, New Zealand		1120 Scott Wilkinson Using measurement and modelling to quantify uncertainty in the response of catchment sediment yield to land management	1120 Valentin Golosov Response of a small arable catchment sediment budget to introduction of soil conservation measures
	1140 Lucy Clarke An evaluation of the role of physical models in exploring form-process feedbacks in alluvial fans	1140 Nick Preston Off-slope sediment delivery from landsliding during a storm, Muriwai Hills, North Island, New Zealand		1140 Ashley Webb Impacts of native forest harvesting on in-channel erosion and sediment yields in unmapped headwater catchments	1140 Andy Lowes Floodplain nutrient dynamics: patterns, controls and the influence of changing hydrology.
	1200 Murray Hicks The signature of an extreme erosion event on suspended sediment loads: Motueka River Catchment, South Island, New Zealand	1200 Ian Fuller Connectivity in steepland environments: gully-fan coupling in the Tarndale system, Waipaoa catchment, New Zealand 1220 Mike Marden Gully erosion and sediment load: Waipaoa, Waiapu and Uawa rivers, eastern North Island, New Zealand 1240 Albert Kettner Will human catalysts or climate change have a greater impact on the sediment load of the Waipaoa River in the 21st century?		1200 Michael Reid Evidence for catastrophic shifts in the trophic structure of floodplain lakes associated with soil erosion	1200 Jean Minella (Des Walling) Sediment source fingerprinting: testing hypotheses about contributions from potential sediment sources

	<p>1230-Lunch 1400 1400- <i>Session Global Change & Erosion I</i> 1520 Chair: Valentin Golosov 1400 Andrew Hughes Sediment sources in a dry-tropical catchment: Central Queensland, Australia</p> <p>1420 Lothar Schulte Sensitivity of alpine fluvial environments in the Swiss Alps to climate forcing during the Late Holocene</p> <p>1440 Jussi Baade An overlooked sediment trap in arid environments: ancient irrigation agriculture in the coastal desert of Peru</p> <p>1500 Manfred Spreafico the UNESCO International Sediment Initiative (ISI)</p>	<p>1300- Lunch 1400 1400- <i>Session Management II</i> 1520 Chair: Des Walling 1400 Luciana Esteves Managing coastal erosion: from long-term coastal evolution to seasonal shoreline changes</p> <p>1420 Chris Thompson Hydrological and sedimentological connectivity of unsealed roads</p> <p>1440 Aaron Hawdon Hydrologic Recovery of Rangeland following Cattle Exclusion.</p> <p>1500 Arthur Horowitz The effect of increasing urbanization and population density on the concentrations of sediment-associated constituents for the conterminous U.S.</p>		<p>1230-Lunch 1400 1400- <i>Session Unlocking the archives III</i> 1520 Chair: Jochen Schmidt 1400 Ana Navas Use of Beryllium-7 to assess soil redistribution by erosion in two contrasting Mediterranean environments</p> <p>1420 Andrew Swales Recent tidal-flat evolution and mangrove-habitat expansion: application of radioisotope dating to environmental reconstruction</p> <p>1440 Nuria Martinez-Carreras Uncertainty assessment in suspended sediment fingerprinting based on tracer mixing models: a case study from Luxembourg</p> <p>1500 Michael Cheetham Connecting the disconnected: Longitudinal correlation of river terrace remnants</p>	<p>1230-Lunch 1400 1400- <i>Session Processes & Scales VI</i> 1520 Chair: Ian Foster 1400 Jan-Christoph Otto Sediment storage in alpine sedimentary systems – quantification and scaling issues</p> <p>1420 Paolo Perona (Peter Molnar) Stochastic sediment-vegetation dynamics in an Alpine braided river</p> <p>1440 Hugh Smith Scale and sediment dynamics in upland catchments, south-eastern Australia</p> <p>1500 Wayne Erskine Channel Incision and Sand Compartmentalization in an Australian Sandstone Drainage Basin Subject to High Flood Variability</p>
<p>1600-1800 Registration, Canterbury University Staff Club</p>	<p>1520- Afternoon tea 1600 1600- <i>Session Management I</i> 1730 Chair: Chris Phillips 1600 Bernd Cyffka Erosion without sediment supply? The crux of a floodplain restoration project lying downstream of dammed-up headwaters</p>	<p>1520- Poster Session 1600 Poster authors please be at poster 1600- <i>Session Unlocking the archives II</i> 1730 Chair: Tim Davies 1600 Philip Greenwood Assessing the remobilisation of recently deposited sediment from river flood plains during single overbank flood events, using caesium-134 and cobalt-60 as tracers</p>		<p>1520-Poster Session 1600 Poster authors please be at poster 1600- <i>Session Processes & Scales III</i> 1730 Chair: Tom Cochran 1600 Carolyn Mills A study of spatial scaling in suspended sediment yield along a rural river system – the River Eden, Cumbria, UK</p>	<p>1520-Afternoon tea 1600 1600- <i>Session Global Change & Erosion IV</i> 1730 Chair: Nick Preston 1600 Peter Almond Climatic and anthropogenic effects on soil transport rates and hillslope evolution</p>
<p>(Cash Bar available)</p>	<p>1620 Shadrack Mulei Kithiia Sediment dynamics and improvised control technologies in the Athi River drainage basin, Kenya</p> <p>1640 Anne-Gaelle Ausseil (John Dymond) Estimating the spatial distribution of sediment concentrations in the Manawatu River, New Zealand, under different land-use scenarios</p> <p>1700 Michael Stone Impacts of wildfire and post-fire salvage logging on sediment transfer in the Oldman Watershed, Alberta</p>	<p>1620 Baihua Fu Influence of particle size on geochemical suspended sediment tracing in Australia</p> <p>1640 Rob Cossart Determination and interpretation of sediment provenance in a sedimentary sequence affected by post-depositional changes</p> <p>1700 Xinbao Zhang Mass balance models for use with 210Pbex measurements to estimate soil loss from cultivated land</p>		<p>1620 Andrew Brooks Using remote sensing to quantify sediment budget components in a large tropical river - Mitchell River, Gulf of Carpentaria</p> <p>1640 Sandy Elliott SPARROW Regional Regression for Sediment Yields in New Zealand Rivers</p> <p>1700 Yulia Kuznetsova Morphometric analysis of interfluvial topography for scaling soil erosion rates from local to regional scales</p>	<p>1620 Ian Foster Reconstructing historical sediment yields from the infilling of farm reservoirs, Eastern Cape, South Africa</p> <p>1640 Jochen Schmidt et al. Parting Words</p>
	<p>1730- Icebreaker 1900 Drinks provided</p>	<p>1730- ICCE plenary meeting 1830 1830- Drinks provided 1930</p>	<p>Expected return: 1900</p>	<p>1900 Buses leave from University to Grand Chancellor 2000 Conference Dinner Hotel Grand Chancellor (cash bar available) 2230 Buses leave from Grand Chancellor</p>	