



**GEOLOGICAL SOCIETY OF NEW ZEALAND**

**NEW ZEALAND GEOPHYSICAL SOCIETY**

**Joint Conference – Massey University, 4-7 December 2006**



## **Geosciences'06 – Our Planet, Our Future**

### **ONLY CIRCULAR AND REGISTRATION FORM**

In 2006, the Geological Society of New Zealand / New Zealand Geophysical Society Joint Conference is to be held in Palmerston North, a cosmopolitan and student-friendly city, heart of the Manawatu-Wanganui region. The conference is being organised by staff from the Soil & Earth Sciences group of the Institute of Natural Resources, Massey University. The meeting will take place on the attractive and recently redeveloped Turitea Campus, and will be held from Monday 4 December to Thursday 7 December 2006.

The theme selected for the 2006 conference is deliberately focused on the future of our planet, and by implication, the future of our scientific disciplines. Looking ahead of the IUGS/Unesco-sponsored “Earth Sciences for Society” initiative, we plan to offer an inclusive mix of both thematic and general sessions that will reflect the diversity of geosciences in New Zealand and the South Pacific region.

The conference will be preceded by a selection of one-day field trips on Sunday 3<sup>rd</sup> December. A mid-conference half-day field trip is organised for Wednesday 6<sup>th</sup> December, an exceptional opportunity for registrants to discover the spectacular development of wind-power generation around Palmerston North. Long field trips (2 or 3 days) will take place after the conference, between Friday 8<sup>th</sup> and Sunday 10<sup>th</sup> December.

Conference registration will commence at 5:30pm in the AgHort Complex on Sunday 3<sup>rd</sup>, in conjunction with the student-organised Ice Breaker function. Registration will continue at 8:00am on the morning of Monday 4<sup>th</sup> December at the same location. The formal welcome and opening ceremony will commence at 9.00am in the main amphitheatre (AH 1) of the conference venue. Information desks will be staffed during coffee and lunch breaks throughout the conference.

All **correspondence** relating to the technical programme and field trips should be sent to GSNZ/NZGS Joint Conference - Geosciences'06, c/o Dr Jérôme A. Lecointre, INR Earth Sciences, Turitea Campus PN 432, Massey University, Private Bag 11222, Palmerston North. By fax: (06) 350.5632 or by email to J.A.Lecointre\_at\_massey.ac.nz . **Abstracts** should be sent directly via email to gsnz06\_at\_massey.ac.nz .

All **accommodation and registration enquiries** should be directed to the Conference Organiser (for full address and contact details please refer to the end of this circular, or see the enclosed Registration Form). Further information on the conference and copies of the Registration Form can also be downloaded from the GSNZ web site at <http://www.gsnz.org.nz> .

## Oral and Poster Papers

The scientific programme will cover topics of interest to members of our two sister societies. According to the theme selected for this year, papers focused on global issues and with specific relevance to New Zealand and the South Pacific are especially welcome. We have planned at this stage four symposia that will regroup communications on (1) “*Geohazards*”; (2) “*GIS and applications in Geosciences*”; (3) “*Volcaniclastic sedimentation in the SW Pacific*” as a special meeting of the IAVCEI Commission on Volcanogenic Sediments; and (4) “Crust and upper mantle structure of the central North Island”. Topics covering other aspects of earth science will be regrouped in general sessions. Plenary speakers are being sought in order to illustrate key achievements and recent developments of New Zealand geosciences. Visiting scientists from overseas are also encouraged to present results from research programmes involving international collaborations.

Concurrent sessions will run for the rest of each day. We request that registered delegates limit their abstract submission to one paper (oral or poster). Registrants may be co-authors on additional papers, but not present them. Registrants wishing to submit and present more than one abstract may do so, with the proviso that the organising committee reserve the right not to accept such additional papers offered in the event that the available programme slots are fully subscribed.

### Special Symposia:

#### **A. Geohazards: the role of geoscientists in effective land-use planning for natural hazards**

*Conveners: Shane Cronin and Bruce Glavovic  
(Massey University)*

In this half-day session we wish to take stock of the state of the art in geological hazard studies and explore challenges and opportunities for integrating new advances in geological knowledge and science into improved land-use planning. Toward this aim we invite oral and poster paper contributions that will either:

- Review the state of knowledge for individual or related hazard processes (earthquakes, landslides, floods, volcanism, tsunami, etc) particularly in conjunction with land-use and urban planning,
- Describe new results of specific geological hazard-related studies,
- Demonstrate new methods of quantifying the temporal recurrence or forecasting of hazard events, or,
- Describe new methods of mapping or portraying geological hazards to planners and policymakers.

#### **B. GIS and applications in Geosciences**

*Conveners: Arne Pallentin (NIWA), Mark Rattenbury (GNS Science) and Jonathan Procter  
(Massey University)*

A special session of the GIS Special Interests Group will be held at the 2006 joined GSNZ / NZGS conference. We invite papers on the use of Geographic Information Systems (GIS) in all areas of Geosciences, from mapping to modeling. The special session will include oral (including GIS-live!) and poster papers.

### **C. Volcanogenic sedimentation in the SW Pacific**

*Conveners: Vern Manville (GNS Science, Taupo)  
and Karoly Nemeth (Massey University)*

The special session of the IAVCEI Commission on Volcanogenic Sediments invites papers on syn- and post-eruptive sedimentary processes in and around volcanoes from the Pacific region. Papers dealing with textural characteristics of volcanoclastic deposits of primary, reworked and resedimented origin and their facies organization are welcome. We also invite speakers presenting their work on magma-sediment interaction in the Pacific region. This session wishes to give an opportunity to present any research dealing with primary and secondary volcanoclastic deposits around the active volcanoes of the Pacific Rim as well as from volcanic islands in the Pacific including sediment transportation and deposition modelling. Studies to demonstrate volcanic reconstruction of volcanic regions based on facies analysis of pyroclastic rocks of the geological record in and around the Pacific are also welcome.

*Web site of IAVCEI - CVS: <http://www.otago.ac.nz/geology/cvs.htm>*

### **D. Crust and upper mantle structure of the central North Island and its development over time**

*Convener: Martin Reyners (GNS Science)*

When submitting your abstract, please indicate on the registration form if you are submitting a presentation to either of the special theme symposia. Other themes will be added later to reflect the range of papers submitted by participants or the requests of potential conveners.

Oral papers will be scheduled for 20 minute slots, 15 minutes for presentation and 5 minutes for discussion. As there will be concurrent sessions during much of the conference, changeover times will be synchronised. Lecture theatres will contain one data projector (for PowerPoint presentations only). An overhead projector will also be available in each room. Plenary speakers will be allocated additional time for presentations, further details to be advised.

### **Poster Papers**

Posters on all aspects of earth science are invited, as well as those linked to the conference theme Symposia listed above. Each poster author will be asked to be present at their poster at a designated time to provide an opportunity for conference participants to ask questions and discuss research results with authors presenting the poster. Those wishing to present posters are invited to consult the Society's web site for detailed guidelines on poster design before the registration deadline.

*Coordinator: Clel Wallace*

### **Abstracts**

We will accept abstracts up to one page in length (using 12pt Times New Roman font) for all talks and posters, including plenary presentations (see formatting requirements below). Abstracts will be published in the conference Programme and Abstracts Volume (A4 size, black and white reproduction) as a Geological Society of New Zealand Miscellaneous Publication. We request that authors limit the number of offered papers to one, if more than one abstract for either oral or poster presentations is offered by a presenting author, we will only be able to accept these if there remain available slots in the programme. Please ensure that your abstract is reviewed internally or by co-authors prior to submission. Check the formatting. You need to be a bona fide registrant to have your

abstract published in the programme and abstracts volume. All abstracts will be reviewed prior to acceptance.

We ask that abstracts are sent by email as an attachment (preferably in Microsoft Word format; plain text if not) to [gsnz06\\_at\\_massey.ac.nz](mailto:gsnz06_at_massey.ac.nz) with **abstract**, whether it's a **talk**, **poster**, and/or **student paper** in the email subject line eg: **abstract – talk – student**. Formatting for abstracts should be as follows:

## **PLANETARY ACCRETION IN THE SOLAR SYSTEM**

**A. Scientist<sup>1</sup> & A.N. Astronaut<sup>2</sup>**

<sup>1</sup>Manawatu Blue Sky Institute, PO Box 4044, Palmerston North.

<sup>2</sup>School of Geosciences, University of New Zealand, PO Box 123, Wellington.  
([a.scientist\\_at\\_mbsi.org.nz](mailto:a.scientist_at_mbsi.org.nz))

We describe the results of planetary accretion simulations that investigate the dependence of terrestrial-planet formation on nebula surface density profile and evolution of the eccentricities of Jupiter and Saturn. Peaked profiles are generated by models of coagulation in an initially hot nebula. Models with initial  $e_{J,S} = 0.05$  (the current value) and 0.1 are considered. Simulations using the decaying profile with.....

*maximum of one A4 page.....*

### **Authors, please note required formatting:**

- entire abstract (text/figures) must fit one A4 portrait page, 3 cm margin all around.
- Times New Roman 12pt font, single line spacing throughout. Title bold capitals, authors bold lowercase; presenting author underlined. All other text plain.
- title, names and addresses centred; rest of abstract justified flush left and right.
- authors' names and each address to fit on one line (omit "New Zealand" if necessary).
- add presenting author's email address on a new line after the last author
- blank line after title, before the text body and between paragraphs.
- no page numbers, paragraph indents or footnotes.
- white-background diagrams are fine, but use patterns rather than grey shades. Please note figures will be reduced to **50%** size in the final abstract volume 2-column layout, and authors submitting figures will need to reduce text accordingly.
- we reserve the right to edit or reject abstracts not conforming to the above.

All abstracts must be with the conference organising committee by **Friday 15 September**. Indicate on the Registration form **and** in your email subject line whether you prefer your presentation to be made as a talk or poster. We will try to accommodate your preference; and will confirm in advance of the conference what sort of presentation you have been allocated.

**Abstracts must be submitted electronically by email to:**  
**[gsnz06\\_at\\_massey.ac.nz](mailto:gsnz06_at_massey.ac.nz)**

### **Student Awards**

GSNZ and NZGS will make awards for the best student poster and oral papers at the conference. All authors who register as students, and are student members of the societies, are eligible for these awards, as long as they are dominantly responsible for content and presentation. See the GSNZ and NZGS societies web sites for

eligibility and details. All registered students presenting papers will be provided with a statement of criteria on which judging will be based.

## Student Travel Grants

The Society will provide a travel grant to assist students to attend the conference. To be eligible, students must be presenting a poster or oral paper, must have been enrolled as a student during 2006, be a member of GSNZ, and must fill in the appropriate application on the registration form and send in the form by **15 September**. Successful applicants will be informed by 31 October, and may collect their cheques at the conference registration. The amount of money granted will depend on the total number of applicants, but is likely to be at least \$150 for students most distant from Palmerston North and proportionately less for those from closer centres. In addition, students are offered registration at a discount rate.

## Annual General Meeting

The 51<sup>st</sup> Annual General meeting of the Geological Society of New Zealand will be held on Wednesday late afternoon, 6 December. The official notices and agenda will be published in the October issue of the GSNZ Newsletter.

## Social Events

- An informal "Ice-breaker" function, organised by Massey postgraduate students, will be held in the AgHort Foyer area from 5:30-7.30 pm on Sunday 3 December. Cost will be included in the registration fee.
- BBQ with a true "Cultural Experience" at Turakina Māori Girls College, Marton, will be from 7.00pm on Monday 4 December. The cost is \$33 per person, and includes a complimentary drinks voucher. Transport to and from the venue will be provided.
- Conference Dinner (*theme: "The French Nouvelle Vague: Cannes and cancans"*) will be held on Wednesday 6 December at Novotel (Carlton 2 Room), downtown Palmerston North. Transport will be provided from the Turitea campus. Pre-dinner drinks will be available from 7.00 pm, and dinner will be served at ~7.30 pm. The cost of the Conference Dinner is not included in the standard registration price and places must be booked and paid for separately. Cost \$50; students at \$40 (Limited to 220 registrants). There will be prizes for the best/most imaginatively dressed "film star", "film director", and "dancing couple".
- Note that **lunches are included** in the registration fee. These will be available during extended lunch breaks in the AgHort Complex venue (foyer area), providing the opportunity for participants to view posters and meet with poster paper authors.

## Accommodation

The society has pre-booked 200 individual rooms in **4 brand new and top of the line student hostels** (Totara, Matai, Tawa, and Miro) on Turitea Campus, close to the conference venue. Beds will be allocated on a "first come-first served basis". Bookings and payment for the student hostel must be made on the attached registration form. **Registrants can expect a very good standard of accommodation in these new buildings:** large spacious bedrooms, well equipped and spacious common rooms complete with plasma TVs and Sky, and modern facilities make these halls a luxury pad to call home. See details and photos at: <http://student-services.massey.ac.nz/default.asp?articleid=551#mati> .

People wanting to stay in motels located downtown are asked to make their own accommodation arrangements. The Palmerston North Visitor Centre (ph. 06 350 1922) may be able to provide further assistance. Bookings can also be arranged through the *Destination Manawatu* web site:

<http://www.manawatunz.co.nz/Pages/Accommodation/Motels.php> .

## Accompanying Persons

Please note that there is no crèche or accompanying persons programme for this conference, although there is a wide range of things to do in Palmerston North, including museum visits, sophisticated shopping, discovery of historic heritage buildings, and walking along a great network of city and river tracks. Brochures detailing some of these activities will be provided with the conference. Consult the Destination Manawatu Web site for more information:

<http://www.manawatunz.co.nz/Pages/ThingsToDo/?PHPSESSID=55310ee9b579d4cefc91a28cc0479807>

In addition, accompanying persons are welcome on fieldtrips and at social events, provided places are booked and paid for on the registration form. A \$5.00 processing fee will apply.

## Discounted Registration Fee

To qualify for the discounted registration fee, **your registration form and payment must be received no later than 15 September**. Note that REGISTRATIONS AFTER 15<sup>th</sup> SEPTEMBER ARE **\$50** MORE EXPENSIVE. This represents a realistic costing of the additional work required for late registration. A hard copy of the Registration Form is included with this Newsletter insert. Registration by email or fax is also acceptable; a digital copy of the Registration Form can also be downloaded from the GSNZ website at <http://www.gsnz.org.nz>. All digital Abstracts must be received on or prior to the 15 September. Telephone registrations will not be accepted.

All those registering will receive an acknowledgement of receipt of registration within two weeks and a full confirmation of registration (and accommodation where applicable) after the 15 September discount registration deadline. A receipt will be forwarded with your confirmation after both **registration AND payment** have been processed. Our policy on refunds and cancellations is:

<i>Cancelled before:</i>	<i>Refund of:</i>
1 November	80%
17 November	50%

No refund is given for cancellations received after 17 November, including “no shows” at the conference, unless there are exceptional circumstances and are at the discretion of the organising committee.

## Pre-conference field trips

We are offering **3 one-day field trips on Sunday 3 December**. These trips will depart from Palmerston North and will return to the Massey-Turitea Campus on time for the Ice-breaker function. Lunch will be provided for participants on the full-day trips and is usually included in the cost, except where specifically mentioned. A printed copy of the selected Field excursion guidebooks will be given to delegates who have registered for at least one field trip. All other conference participants will receive only an electronic version of the Field excursion guidebooks (CD inserted in Programme & Abstract Volume).

*Notes for all field trips:* All participants should be prepared for weather ranging from warm sunny days to cold windy and/or rainy days. While we will endeavour to cater for all who indicate they wish to participate on the field trips, it is likely that the number of seats will be limited after the conference registration deadline of 15<sup>th</sup> September. Excursions may be cancelled if there is insufficient interest.

### **Pre-conference Day Trip 1: Holocene sedimentary successions in Manawatu coastal plain**

*Leader: Craig Sloss (Massey University)*

*Duration: 1 day, Sunday 3 December*

*Route: Palmerston North – Manawatu Coast (Minivans)*

**Objective:** This fieldtrip will focus on the Late Quaternary geology of the lower Manawatu River and the Holocene sedimentary successions preserved in the marginal marine record of the Manawatu coastal plain.

**Main points of interest:** During the LGM fluvial activity resulted in valley incision into OIS5e marine terraces resulting in small river valleys and a moderately dissected landscape. During the most recent post glacial marine transgressing rising sea levels inundated the incised valleys in the lower Manawatu and Oroua Valleys (c. 6500 years ago). During the latter stages of the post glacial marine transgression natural barriers associated with the Himatangi anticline and Poroutawhao High restricted oceanic influences and facilitated the formation of low-energy estuarine environments and the partial infill of the incised valleys with fine-grained estuarine mud. The partial infilling with estuarine sediments within the dissected terraces resulted in producing flat valley floors characteristic of the box-shaped valleys. The phase of estuarine deposition was succeeded by fluvial deposition, floodplain aggradation and the most extensive transgressive dune field in New Zealand.

*Cost: \$35. Transport and lunch included (Lunch at Foxton Beach).*

*Maximum number of participants: 20*

### **Pre-conference Day Trip 2: The Geology of the Northern Manawatu and Rangitikei**

*Leaders: Alan Palmer (Massey University), John Begg, and Dougal Townsend (GNS Science)*

*Duration: 1 day, Sunday 3 December*

*Route: Palmerston North – Manawatu and Rangitikei circuit*

**Objective:** This trip will visit some well known sites, where correlations, dating and interpretations have been refined over recent years. The Q-map exercise has also forced us to interpret some landscapes and deposits differently. There are new interpretations of the interplay between river and marine terraces. We will first visit Finnis Road on the Pohangina Anticline, followed by stops at Halcombe and Rangitawa Stream, Stormy Point, Mt Curl and Griffins Road.

**The trip does not involve walking or climbing, but sturdy shoes or boots would be an advantage.** Lunch will be provided.

*Cost: \$35*

*Maximum number of participants: 30*

### **Pre-conference Day Trip 3: Landslide and Slope Instability Hazards affecting Paekakariki, the SH1 Coastal Highway, and proposed Transmission Gully Motorway**

*Leaders: Graham Hancox and Nick Perrin (GNS Science)*

*Duration: 1 day, Sunday 3 December*

*Route: The tentative itinerary is as follows: (a) Paekakariki township area and Fly-by-Wire Gully; (b) Paekakariki Hill Road; (c) SH 1 Coastal Highway (Paekakariki–Pukerua Bay–Porirua); (d)*

Transmission Gully (northern end to Wainui Saddle – includes TGM route, with proposed cut slopes, ‘viaduct’ sites, Ohariu Fault Zone etc). **Pick up and drop off at Paekakariki Railway Station.**

**Objective:** To view and discuss Landslide and Slope Instability, and Earthquake Hazards affecting Paekakariki, the SH1 Coastal Highway, and the proposed Transmission Gully Motorway.

**Main points of interest and specific issues illustrated will include:**

- Debris flood hazards and remedial works at Paekakariki.
- Landslide hazards affecting the existing SH1 Coastal Highway.
- The proposed Transmission Gully motorway (TGM) route.
- Landslide and active faulting hazards affecting the TGM.
- Construction solutions for the TGM route (and SH1 upgrade).

*Cost:* \$ \$25 per person (includes vehicle hire, insurance, and petrol costs). Lunch would involve an additional cost (\$5-10 to be paid on site).

*Transport* from Paekakariki will be via 2 or 3 x 4WD or 2WD vans (8-seater vehicles) (*for gravel farm road, not off-road*). **People will have to arrange their own transportation to and from Paekakariki Railway Station.**

*Maximum number of participants:* 21 persons (plus 3 drivers= 24).

**Mid-conference field trip:**

**Mid-conference Half-Day Trip 4: New energy, challenging geology: the Tararua Wind Farm**

*Leaders:* TrustPower staff (to be confirmed)

*Duration:* ½ day, Wednesday 6 December - 8.30am to 12.30pm

The wind farm is located in the North Island of New Zealand, 10 kilometres North East of the city of Palmerston North. The site is on a 5.3 kilometre long ridge in the Tararua Ranges and was selected because of the very high annual mean wind speed of around 10m/s at hub-height. The Tararua Wind Farm has been recognised as one of the best wind generation sites in the world, achieving an average capacity factor of approximately 45% over 5 years of operation. The Tararua Wind Farm has received strong community endorsement and support, and is considered a tourist attraction by the city of Palmerston North and the surrounding towns. Through a visiting program for educational groups, many people have also had the opportunity to experience learn more about wind power and visit a world class commercial wind farm.

*Cost* \$10.00

*Maximum number of participants:* 150

**Post-conference field trips**

Leaving Palmerston North on **Friday 8 December** at 8.00 am.

Note: Spaces are limited on these trips. Students especially are encouraged to participate.

### **Post-conference Two-day Trip 5: Volcanic Garbology – Rummaging through volcano rubbish**

*Leaders: Bob Stewart, Anke Zernack and Jonathan Procter (Massey University)*

*Duration: 2 days, Friday 8 and Saturday 9 December*

*Route: Palmerston North – Taranaki coast Return (minivans)*

**Objective:** The scenic Taranaki coast from north to south is the setting for this field trip and aspects of the geology will interest sedimentologists, Quaternary geologists and volcanologists alike. During the field trip you will be able to see how the Taranaki volcanoes have interacted with the landscape, how large scale collapses have flowed and been emplaced and how this related to past climates. You will be able to see the internal architecture of debris avalanches and debris flows, and how this reflects flow processes. Landscape readjustments are expressed in the fluvial and terrestrial deposits interbedded with the collapse debris.

The trip will start in north Taranaki, examining some of the older volcanic debris deposits from Egmont and Pouakai volcanoes. We will then travel south around the western coastline of Taranaki to look at progressively younger deposits from Egmont volcano, finishing along the south Taranaki coastal cliffs in which some of the older debris units are exposed.

The trip will involve some walking along often bouldery beaches in what can be windy and exposed conditions. **Good footwear and windproof outer wear are essential as it can be wet and windy along this coast, even in spring.**

*Cost (estimated): \$60*

*Maximum number of participants: 20*

### **Post-conference Three-day Trip 6: Glacial geomorphology of Park Valley, Tararua Range**

*Leader: Martin Brook (Massey University)*

*Duration: 3 days, Friday 8 – Sunday 10 December*

*Route: Palmerston North - Levin - Tararua Range Return*

**Objective:** The purpose of this field trip is to examine examples of late Quaternary glaciation in the central Tararua Range, south-east of Levin. We will look at ‘classic’ examples of large-scale glacial erosional landforms, such as a U-shaped valley, and two hanging valleys/cirques. We will also examine an extensive lateral moraine ridge on the northern side of Park Valley, and some postglacial(?) anti-slope scarps on the south-eastern side of the valley. **This trip requires a high degree of physical fitness, as the trip includes a demanding 8-9 hour tramp into Park Valley (day one), a day in Park Valley (day two) and a 8-9 hour tramp out (day three). This includes 2 nights rough camping in tents in Park Valley.** Although a physically demanding trip, the spectacular views from the 1500m ridge tops across both sides of the North Island are highly rewarding. Note that the trip will be cancelled if weather conditions are unsuitable.

*Cost: \$25 (including tent hire and return transport from Palmerston North to road end).*

*Food/stoves: BYO.*

*Maximum number of participants: 10*

## Trade Displays

Space for booths is available in the Foyer of the AgHort Complex. We welcome enquiries from those who wish to reserve space. Please contact Jérôme Lecointre (conference co-convener) for more information. (j.a.lecointre\_at\_massey.ac.nz).

## Transport to Palmerston North

Those wishing to use public transport will need to make their own arrangements. Both Air New Zealand (0800 737 000) and Origin Pacific (0800 302302) provide daily flights to and from Palmerston North International Airport. Train services and coaches from Wellington and Auckland offer a cheaper option (Web sites: [www.tranzscenic.co.nz](http://www.tranzscenic.co.nz) and [www.transit.co.nz](http://www.transit.co.nz) ).

### Disclaimer

The Geological Society of New Zealand and Conference Organising Committee accept no responsibility for injury, accident, illness or death to, or financial loss by, any person attending the conference or field trips, whatever the reason. All insurance is the responsibility of individual registrants.

## Contact Details

### Conference Convener:

#### **Jérôme Lecointre**

INR - Soil and Earth Sciences  
Turitea Campus PN 432  
Massey University  
Private Bag 11222  
Palmerston North  
Phone: (06) 350 5799 (extension 7391)  
Email: j.a.lecointre\_at\_massey.ac.nz

### Conference Organiser:

#### **Janet Simes**

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### Web Address:

[www.gsnz.org.nz/gskonference.htm](http://www.gsnz.org.nz/gskonference.htm)

### Web Master:

[n.mortimer\\_at\\_gns.cri.nz](mailto:n.mortimer_at_gns.cri.nz)

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