

# Patterns in our Planet: Defining new concepts for the application of multiscale non-equilibrium thermodynamics to earth system science.

Complex Systems Science Symposium – Monday 12 to Friday 16 May 2008

## Whalers Inn Resort, Victor Harbor, South Australia

In 2005, the magazine "Science" posed the 25 most important unresolved scientific questions for the next quarter century. Six of these are related to our earth system comprising the deep earth together with its oceans and atmosphere; a non-equilibrium system driven out of equilibrium by heat fluxes from both the interior of the earth and from the sun. It is now understood that this system is tightly coupled, so that even small changes in one part of the system can have a strong influence on other parts. The complex coupling of physical, chemical and mechanical processes presents some serious challenges to the implementation of modern non-equilibrium thermodynamic concepts.

This conference will facilitate a concerted collaborative effort from the mathematical, mechanical, geoscience, atmospheric and marine modelling communities to overcome challenges and ensure a breakthrough in comprehensive earth system modelling.

## Conference program

This conference program will include keynote and general sessions in the mornings and evenings and brief talks/poster sessions in the afternoons.

**Key themes** - five key themes will be addressed:

1. Geodynamics.
2. Seismology and damage mechanics.
3. Atmospheric sciences, including fluid dynamics and industrial mixing.
4. Material science.
5. The mathematical basis for complex systems and non-equilibrium thermodynamics.

The symposium will be concluded by a comprehensive session arising from the key themes: Towards comprehensive multiscale approaches across space and time.



## Cost

Full registration: \$300 (includes full conference program, morning tea and lunch Tuesday to Friday, welcome BBQ Monday evening and Conference dinner on Wednesday)

Student Registrations: Free of charge (all inclusions as listed above)

If you are interested in attending please make contact with a first response by Friday 29 February 2008. Deadline for Registrations is Friday 12 April 2008.

## Contacts

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<http://www.csiro.au/events/cs Symposium.html>



### Further information

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