

Call for Papers – 2nd CAWCR Modelling Workshop

The 2nd Annual CAWCR Modelling Workshop ("High Resolution Modelling") will be held in Melbourne, 25-28 November 2008. Gary Dietachmayer (G.Dietachmayer@bom.gov.au) and Lawrie Rikus (L.Rikus@bom.gov.au) are the Workshop Co-Chairs.

Themes of the workshop are:

- Numerical Weather Prediction
- Coupled Weather Modelling
- Regional Climate Modelling
- Ocean Modelling – Coastal Sea Level
- Expectations of high-resolution modelling

Confirmed keynote speakers include Isaac Ginis (University of Rhode Island) and Kevin Horsburgh (Proudman Oceanographic Laboratory).

Expressions of interest including a short abstract (no longer than a paragraph) should be emailed by **Friday 12 September 2008** to Val Jemmeson (V.Jemmeson@bom.gov.au). Please include full contact details, and proposed title or subject of your paper.

Talks should be targeted toward one of the five themes of the workshop. If more information is required as to the scope of these themes, please contact the Co-Chairs.

Theme One - Numerical Weather Prediction

This theme considers the challenge of improving numerical weather prediction at high to very high resolutions, with a primary focus on the modelling techniques involved. One possible example is an examination of techniques required to incorporate data sources such as Doppler-radar winds and rain-rates from satellite and/or radar in fine scale data assimilation. Another would be the use of physical parameterisations at these scales, both in terms of the development or extension of current approaches, and the use of embedded-models or explicit resolution of processes such as convection.

Whilst the primary focus is on model development, development is dependent on relevant verification techniques, and is also driven/informed by specific applications, hence talks in those fields will also be considered.

Theme Two – Coupled Weather Modelling

Coupled modelling is traditionally associated with longer time-scales, from seasonal upwards. However, advances in both the underlying science and available computing power now make it feasible to couple systems at high resolutions, as seen for example in tropical cyclone-wave-ocean prediction systems. More generally, the move towards "Seamless Prediction Systems" is likely to bring the coupled modelled approach to short-range modelling for the atmosphere, waves and ocean, at higher and higher resolutions.

Theme Three - Regional Climate Modelling

Due to their great complexity and associated computational cost, global climate models are forced to run at relatively coarse resolutions. However, decision-makers are often interested in the local climate, and this in turn requires high resolution to capture features such as local orography. To meet this need, high-resolution limited-area "Regional Climate Models" have been developed that run nested inside global systems. A particular challenge in RCM development is the nesting strategy used, for example, nudging and boundary-condition treatments.

Theme Four - Ocean Modelling – Coastal

The coastal and shelf regions of the ocean are frequented by a wide range of processes that are challenging to adequately observe, model and predict. Coastal sea level for example is impacted by tides, storm-surge, coastally trapped waves, tsunamis, wind-waves, ocean weather of boundary currents and eddies, river discharge and seasonal steric changes. On longer time scales under the influence of climate change and rising sea levels, how extremes of sea level may change in the future is important to coastal planning and management. Further, the coastal zone is also a biologically active region which is being modelled through high resolution coupled bio-geo-chemical modelling and presents a number of scientific and technical challenges.

Theme Five - Expectations of high-resolution modelling

From a science perspective, what do we hope to achieve through high-resolution modelling? For example, do we simply want more accurate predictions, or predictions with fundamentally new capabilities? And if the latter, how do we verify our systems?

From a user/policy perspective, what information do we hope to gain from high-resolution modelling? For example, is our current strategy likely to support the requirements for water prediction, a key issue for Australia?

Notification of talk acceptance: **26 September 2008**

Deadline for papers: **3 November 2008**

Accepted papers will be published as extended abstracts in a workshop proceedings volume, and will also be made available online (see, for example, the 1st Workshop website at <http://www.bom.gov.au/bmrc/basic/cawcr-wksp1.shtml>).

Further information will be added to the 2nd CAWCR Modelling Workshop website at: <http://www.bom.gov.au/bmrc/basic/cawcr-wksp2.shtml>