



Climate Variability

Program Leader: Dr Francis Chiew (The University of Melbourne)

Project 5A: Hydrologic modelling for weather forecasting

Project Leader: Alan Seed

Bureau of Meteorology, Melbourne

Phone: (03) 9669 4591

Email: a.seed@bom.gov.au

This project promises two things. The first is an improved land surface parameterisation scheme for use in the Bureau of Meteorology's numerical weather prediction models, and focus catchment scale hydrologic modelling in general. The second is continuation of a major field campaign to monitor soil moisture patterns in the Murrumbidgee catchment. The soil moisture monitoring forms an important part of the GEWEX program (an international experiment looking at global energy and water balances). Both of these activities build upon previous work in Project 5.1 and involve substantial in-kind commitments from the Bureau of Meteorology.

One aspect of the project that is crucial to our target modelling capability is the regionalisation (across focus catchments) of parameters used in conceptual rainfall-runoff models, and guidance on how to change these to reflect land-use change (an overlapping interest with Project 2E). There is considerable interest from water authorities in the project; they are eager to use short-term weather forecasts to improve their water system operations.

Duration: 3 years, starting January 2003. Total Budget: \$1.42 million

Project 5B: Stochastic rainfall data generation models

Project Leader: Sri Srikanthan

Bureau of Meteorology, Melbourne

Phone: (03) 9669 4513

Email: sri@bom.gov.au

This project will continue building and testing a suite of software programs that can be used to generate stochastic sequences of climate variables for input to our hydrologic models. The emphasis in this project has shifted from the point scale (the focus of an earlier CRC project) to whole-of-catchment scale, by considering spatial correlations in rainfall data. For our hydrologic models to function at focus catchment scales, we require continuous surfaces of climate variables. We could use historical data, but the stochastically-generated maps that will emerge from this project will allow us to put probabilities on modelled catchment responses.

This project promises excellent cooperation with partner research groups (and hence leverage of knowledge) and will yield very practical tools for inclusion in the Catchment Modelling Toolkit.

Duration: 3 years, starting January 2003. Total Budget: \$1.55 million

