

Crop modelling for interface with general circulation models

A. Challinor

Centre for Global Atmospheric Modelling (CGAM), University of Reading, Reading,
UK

ajc@met.rdg.ac.uk

The continuing development of numerical crop and weather simulation models presents an opportunity to combine these models into a single forecasting system. The issue of the spatial scale of the crop model, and its associated complexity, is of paramount importance in the development of such a system.

This presentation will give an overview of the scaling issues involved, and present a crop model developed at The University of Reading: The General Large-Area Model for annual crops (GLAM). The model is sufficiently process-based to simulate crop productivity over a range of tropical environments, whilst being simple enough to avoid the need for large amounts of location-specific input data or calibration. In this way, the model aims to combine the benefits of more empirical modelling methods (low input data requirement, validity over large areas) with the benefits of a process-based approach (the potential to capture variability due to different intra-seasonal weather patterns, and hence increased validity under future climates). The model is intended for any annual crop, and uses crop parameters which can be estimated from the literature. Some key crop characteristics can be varied in order to explore their effect on productivity in the context of climate variability across a range of time scales. The sensitivities and skill of the model will be explored using gridded hindcasts of groundnut yields across India.

Friday II (Keynote Talk)