

Present and Future Crop Production in the North China Plain



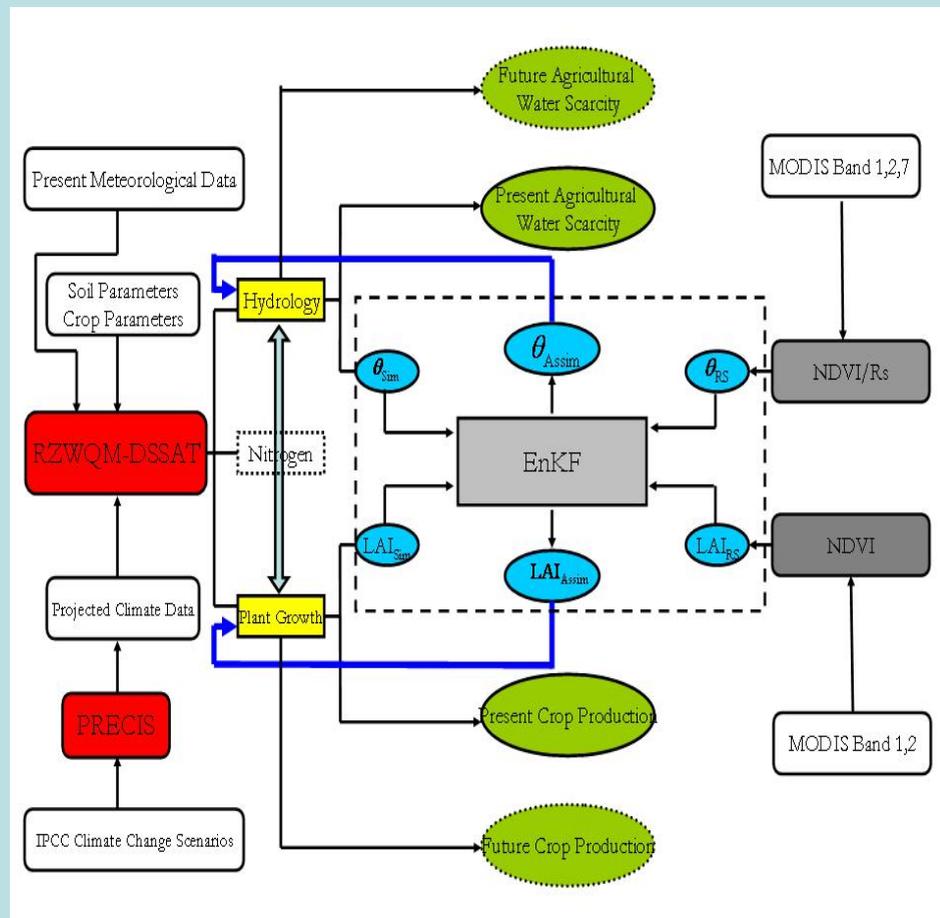
Introduction

- A very important issue in agricultural research is to forecast crop yield
- Another important one is to assess whether food production will be jeopardized by future climate change
- Agroecosystem model is a powerful tool to address these issues
- Data assimilation is expecting to improve model's predictive performance

Material & Methods

- ❖ Agroecosystem model:
RZWQM-DSSAT
- ❖ Observed meteorological data
- ❖ Remote sensed LAI and soil water content (MODIS-derived)
- ❖ Ensemble Kalman Filter (EnKF)
- ❖ Observed crop yield data
- ❖ Projected climatic data:
PRECIS output

Right: General framework of this research. Remote sensed LAI and soil moisture will be assimilated into the model simulations with EnKF technique.



Objectives

- Improve regional crop yield forecast with EnKF strategy, and evaluate present agricultural water scarcity..
- Assess whether food production will be threatened by climate change, and how the crop yield will change regionally ?
- Predict agricultural water supply-and-demand situation in future in the North China Plain.

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