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# MMM *INFORMAL SEMINAR* NCAR

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## WRF FOR OPERATIONAL AGRO-METEOROLOGICAL APPLICATIONS

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The Agro Climate Research Centre (ACRC) of Tamil Nadu Agricultural University has its inception as Department of Agricultural Meteorology during 1998. One of the mandates of the centre is to provide climate and weather information for farmers for their strategic and tactical farm decisions. The nodal agencies like IMD and NCMRWF are not providing such information to the farmers in the scale they require and hence research work was initiated by ACRC. The work using WRF was started during October 2005 and intensified after the participation in the winter Tutorial in January 2006. The first high resolution (5km) medium range forecast in India at block level was developed by this centre with four days lead time for farmers use as Agri Weather Bulletin. The forecasts are available as weather charts and quantitative units hosted in the web pages of (<http://agmet.tnau.ac.in/acrc/index.html>) of TNAU. The northeast monsoon season verification indicated that the skill is around 70 %. To improve further we have the following plans.

- a. The Government of Tamil Nadu has sanctioned \$4.2 millions for installation of 224 Automatic Weather Station in the State (8° 5'N-13° 35'N; 76° 15'E-80° 20'E) with 100 automatic raingauge and 20 nodes xserve cluster for high resolution forecast.
- b. Indian Space Research Organisation (ISRO) gave permission to access their data for use in WRF through our collaborative projects.
- c. Exploiting wrfvar to use real time data and verification tools for further improvement.

### Agromet applications of WRF

1. Medium range weather forecast developed using WRF will help in taking tactical farm decisions like irrigation, fertilizer application and pesticide spraying etc.
2. WRF can also be used for seasonal climate downscaling that can be used for strategic farm decisions like crop/variety selection, land configuration etc.
3. Downscaling of future climate change scenario can be done using WRF that can be fed in to crop simulation models for future yield predictions and policy interventions.
4. There is possibility that WRF can be coupled with pest and disease forewarning models for effective management of pest and diseases.

Friday, 9 May 2008, 10:30 AM

Refreshments 10:15 AM

NCAR-Foothills Laboratory

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