

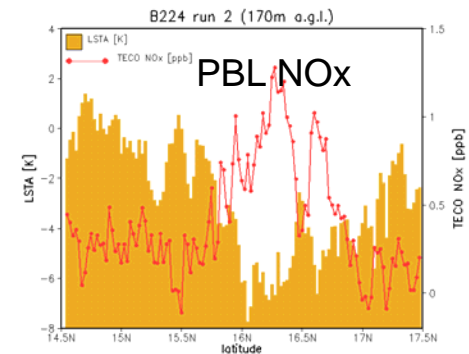
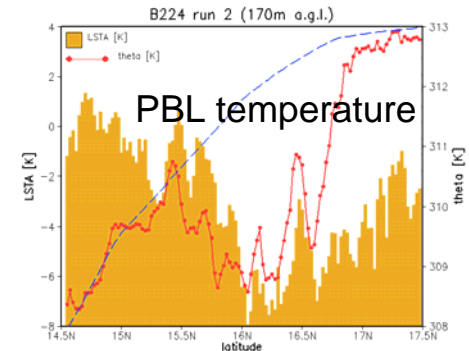


JULES in AMMA

Phil Harris



- African Monsoon Multidisciplinary Analyses:
 - Major international programme focussing on W. Africa
 - CEH interest in coupling between surface and atmosphere (e.g. soil moisture impact on storms)
 - Using JULES to provide estimates of surface state variables and fluxes at high spatial resolution
 - Need this to interpret aircraft obs and initialise mesoscale simulations

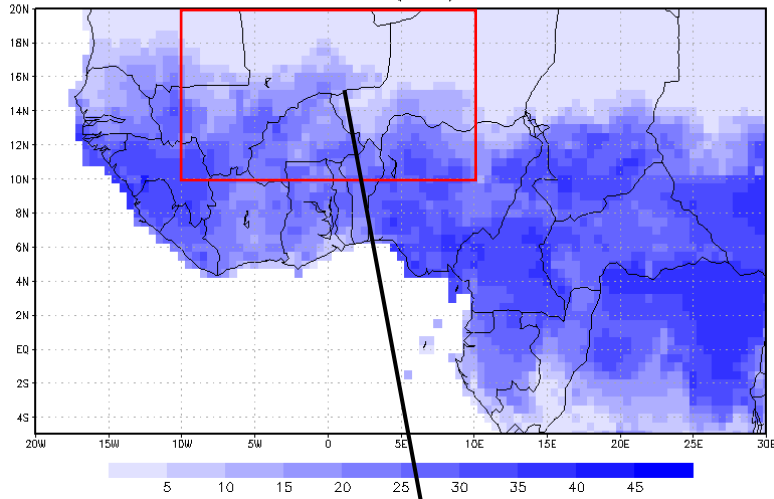


Fine scale structure in surface moisture produces gradients in PBL

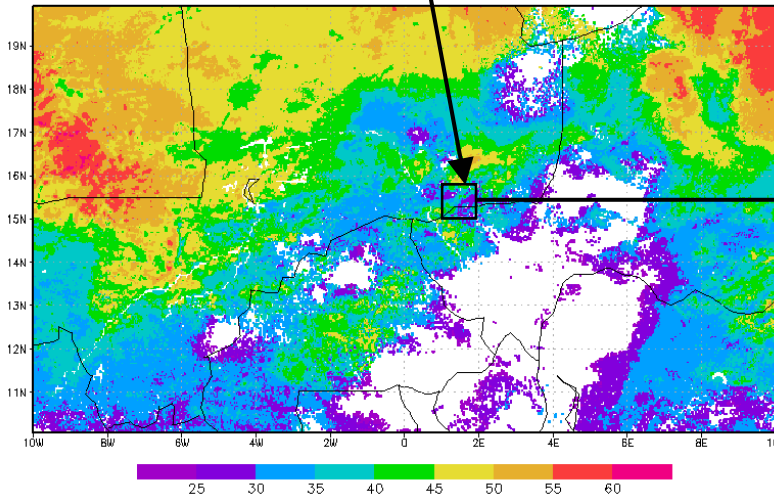
JULES simulations

- Meteorological forcing data for AMMA: coarse resolution and large uncertainties in rainfall
- Meteosat land surface temperature (LST) contains fine scale information about surface moisture (and recent rainfall)
- Use variational assimilation method to constrain JULES simulations with LST data
- Yields finer resolution estimates of soil moisture, heat fluxes etc

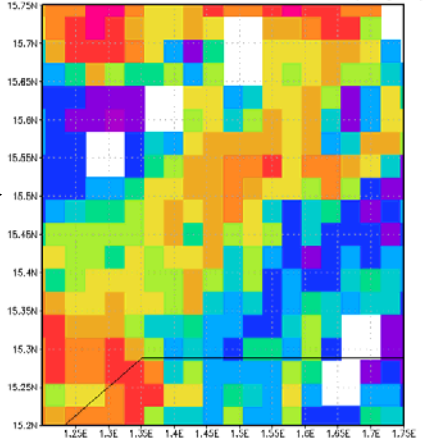
Surface soil moisture (mm) 12Z 31 Jul 2006



Land SAF max LST 31 Jul 2006 (deg C)

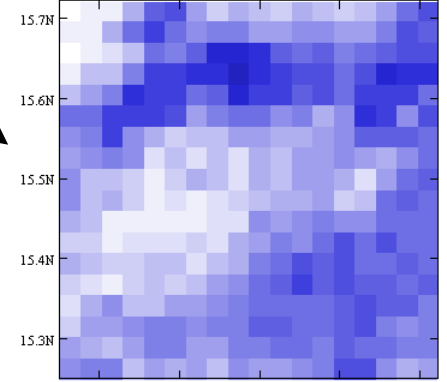


Land SAF max LST 31 Jul 2006 (deg C)



0.5deg

5 cm Soil moisture saturation (%)



10 12 14 16 18 20 22

