JULES in AMMA

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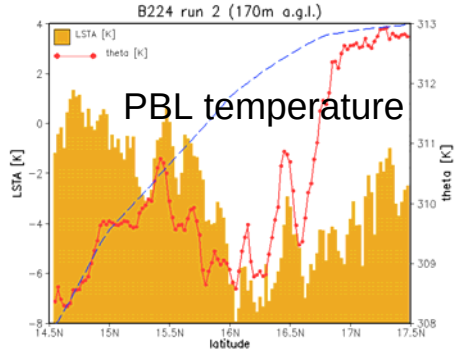
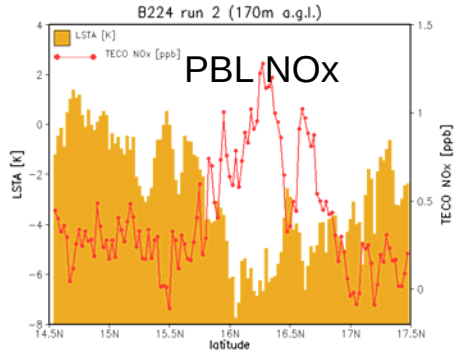
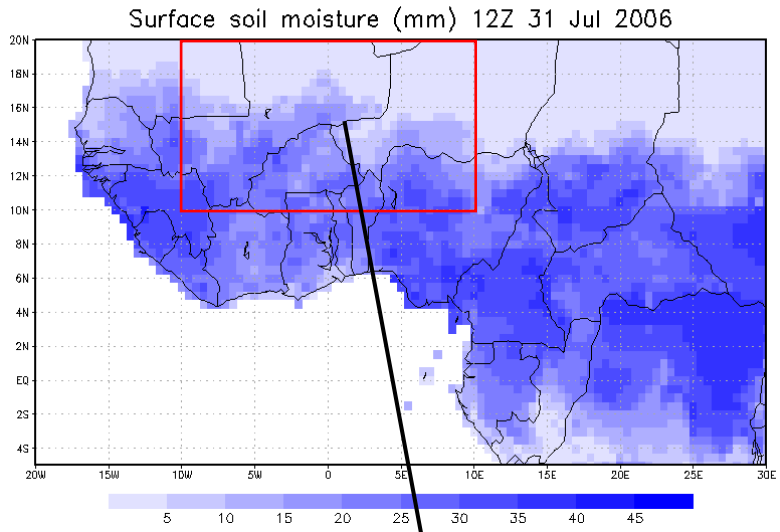
- African Monsoon Multidisciplinary Analyses:
  - Major international programme focussing on W. Africa
  - CEH interest in coupling between surface and atmosphere (e.g. soil moisture impact on storms)
  - Using JULES to provide estimates of surface state variables and fluxes at high spatial resolution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

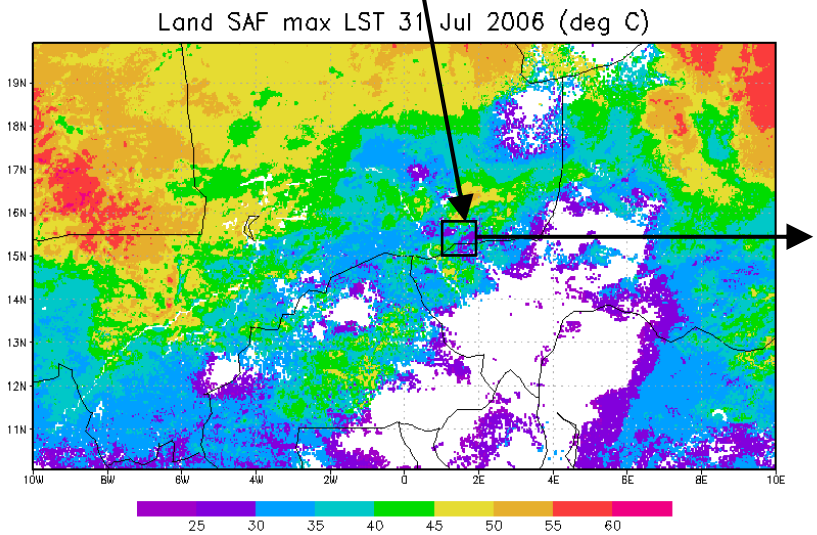


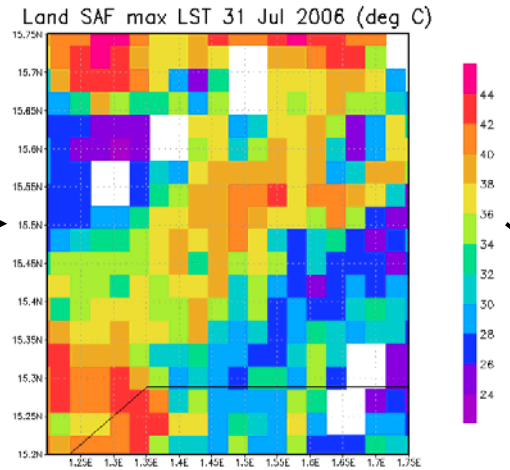


Fine scale structure in surface moisture produces gradients in PBL

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