Recent upgrades to the Bureau of Meteorology ACCESS NWP system
*presenting author

ACCESS is the Australian Community Climate and Earth-System Simulator which implements the NWP components from the UK Met Office (OPS/VAR/SURF/UM)

• Current ACCESS-G APS1 → APS2 upgrade (December 2015)
  • NWP components update (cf. Met Office PS32)
  • Increase in horizontal resolution (N512, 18km)
  • Addition of new satellite observations:
    • Infrared sounder: CrIS, IASI Metop-B
    • Microwave sounders: ATMS, AMSU-A/MHS Metop-B
    • Geostationary Clear Sky Radiances: MTSAT-2
  • Routine adjoint-based forecast sensitivity to observations

• Future ACCESS upgrades
  • New Cray XC40 supercomputer (2016)
  • ACCESS-G: upgrade to match Met Office NWP components + extend observation usage (FY-3, SAPHIR, AMSR2, HIMAWARI)
  • Focus on convective data assimilation (UKV-like): RUC in 1.5km city-based systems (ACCESS-C)

• Land Surface Data Assimilation
  • Soil moisture analysis: 5km resolution over Australia (EKF built around SURF/JULES)
  • Active use of ASCAT + SMOS data
  • Significant application: Fire Danger warnings
  • Operational 2016/2017