Environment Canada Environnement Canada

Canada

Inclusion of new data types in the Canadian data assimilation system

ITSC-16

Angra dos Reis, Brazil

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Environment Canada

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Analysis System

- GEM 33 km, 58 Levels, Model top at 10hPa (30 km)
- 4D-VAR T108, 6h window
  - Simplified physics: includes vertical diffusion, surface drag, orographic blocking, stratiform condensation
  - Two outer loops (30/25 inner iterations)
- Changes to how satellite radiance data are assimilated:
  - RTTOV-7 to RTTOV-8 (for AMSU, AIRS, SSM/I)
  - 15 day sliding window dynamic bias correction
  - Improved interpolation for mapping vertical terrain-following hybrid levels (analysis) to fixed pressure levels (RTTOV)
  - Assimilation of additional AMSU data near scan edges
  - Stricter QC on AMSU-B data to mimic cloud filter

NEW satellite data

- Aqua AIRS (up to 87 channels)
- SSM/I radiances F13, F14
- QuikScat KNMI 100 km product
- GOES AMV's now include low-level cloud-drift winds (3.9 micron channel)
- Increase by 50% of ingested data.
- Largest positive impact in Southern Hemisphere for winter and summer.
- To become operational May 2008
- *GPS-RO proposal for assimilation in parallel to be made in early June 2008.*