Recent progress on assimilation of microwave radiances at Météo-France

**Operational context:**
New HPC (mid-2013) – 2 BULLx 710DLC – 1Pflops
New operational NWP suites at high resolution (April 2014):
ARPEGE (Δx: 10 -> 7.5 km – L70 -> L105)
AROME (Δx: 2.5 -> 1.3 km – L60 -> L90)
4D-VAR: higher resolution / more iterations / more EDA members (6-> 25)

Recent operational changes (04/2015):
- Assimilation of SAPHIR/Megha-Tropiques Tbs
- Revised thinning of SSMI/S Tbs (F16, 17, 18)
- Assimilation of sounding channels from SSMI/S F17 and F18

New operational changes (12/2015):
- RTTOV v11 + internal interpolation
- Revised observation errors for AMSU-B/MHS
- Spatial averaging of SSMI/S channels (noise reduction)
- Monitoring of GMI/GPM-Core Tbs

**Ongoing activities:** preparation of future instruments and improved usage of existing ones
- Improved specification of surface emissivity (oceans – wave model / sea-ice – specularity)
- Assimilation of new instruments: GMI/GPM-Core + SSMI/S/DMSP-F19 + FY-3C
- Simulation and inversion of all-sky Tbs in ALADIN and AROME models with RTTOV-SCATT
- Potential for NWP of hypothetical instruments: hyperspectral MW sounder and MW sounder on GEO