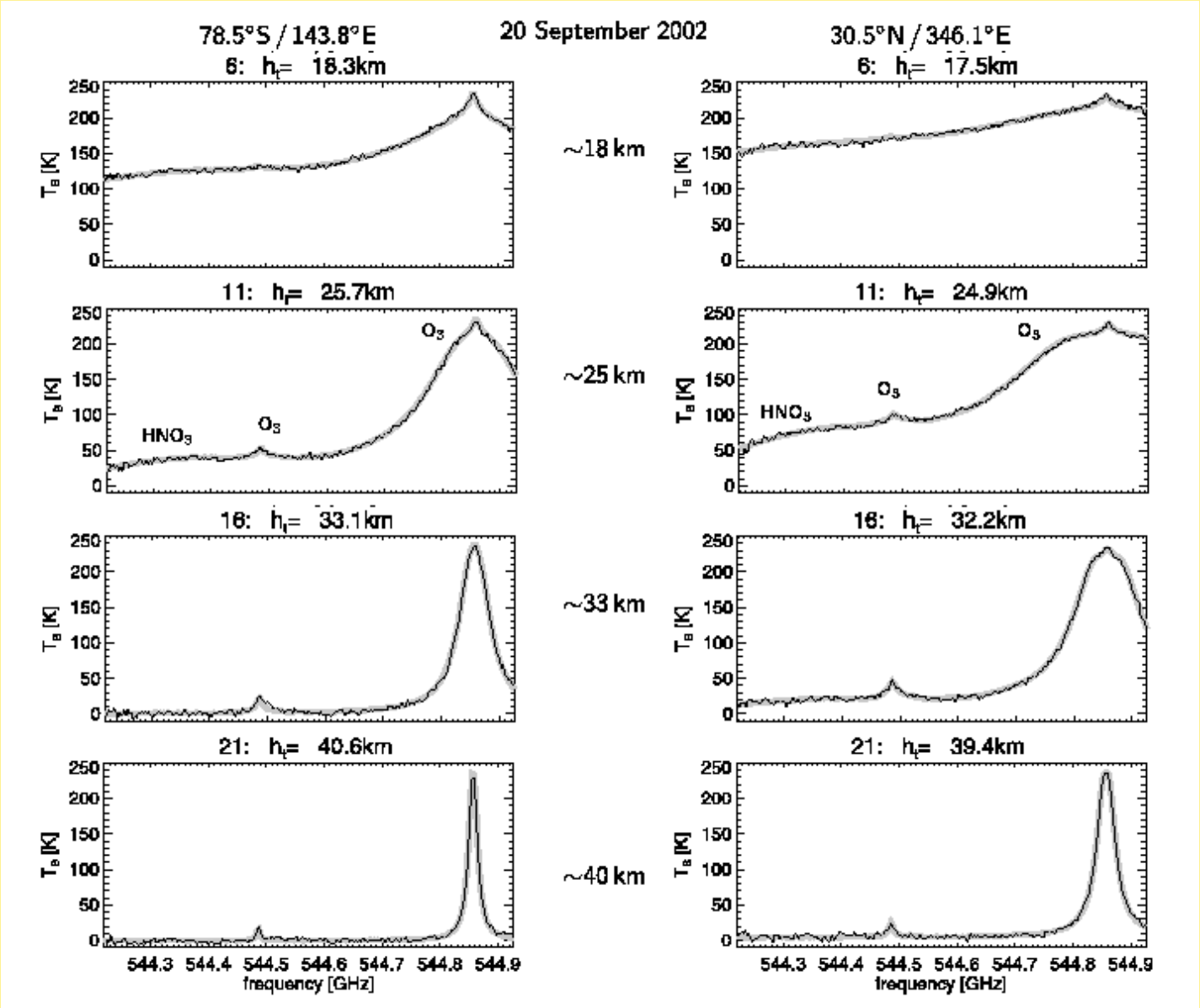
SMR versus MLS HNO3

B. Barret, P. Ricaud, E. Le Flochmoën

Laboratoire d'Aérologie / Observatoire Midi-Pyrénées, Toulouse, France

SMR radiances @ 544.5 GHz

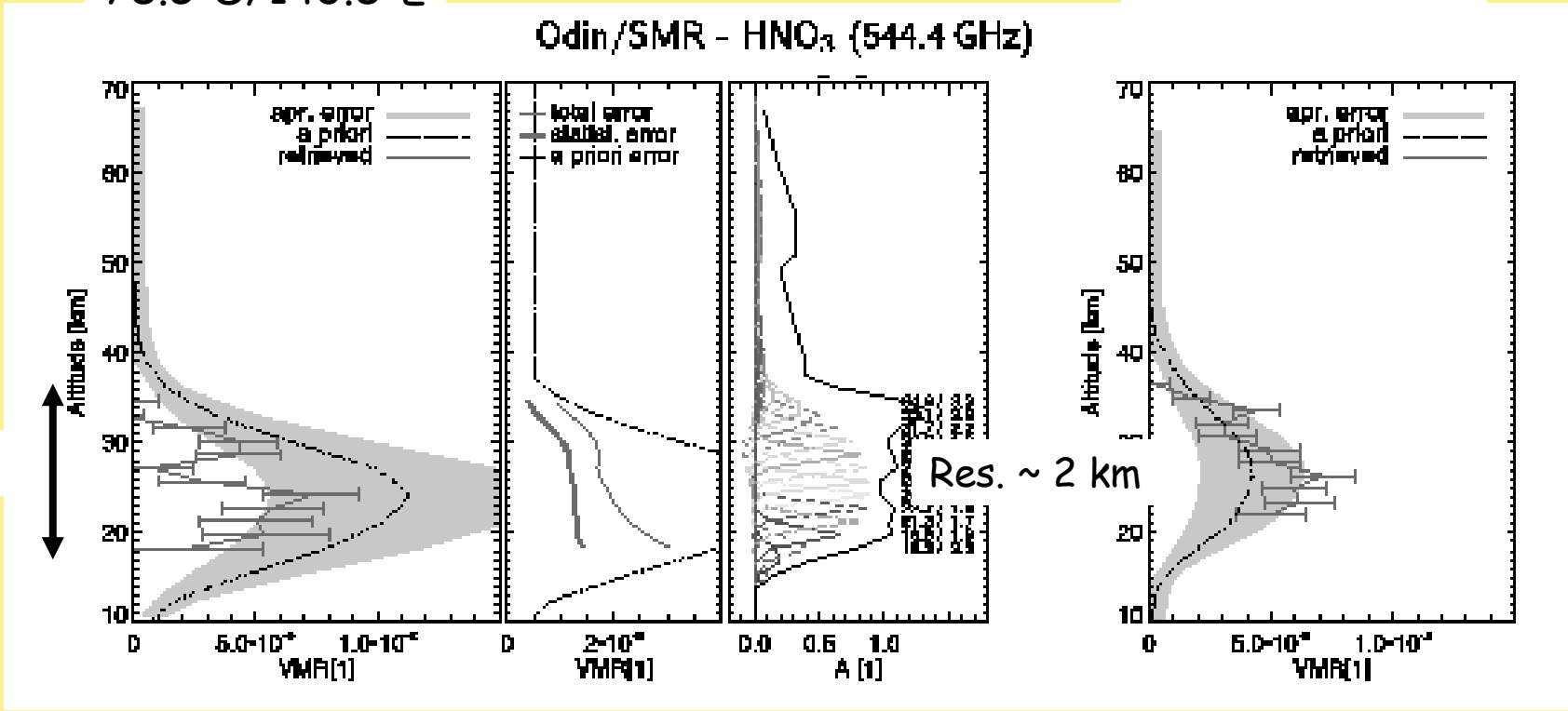


Urban et al., JGR, 2005

HNO3 @ 544.4 GHz

78.5°S/143.8°E

30.5°N/346.1°E



18-35 km

Res. ~ 2 km

Urban et al., JGR, 2005

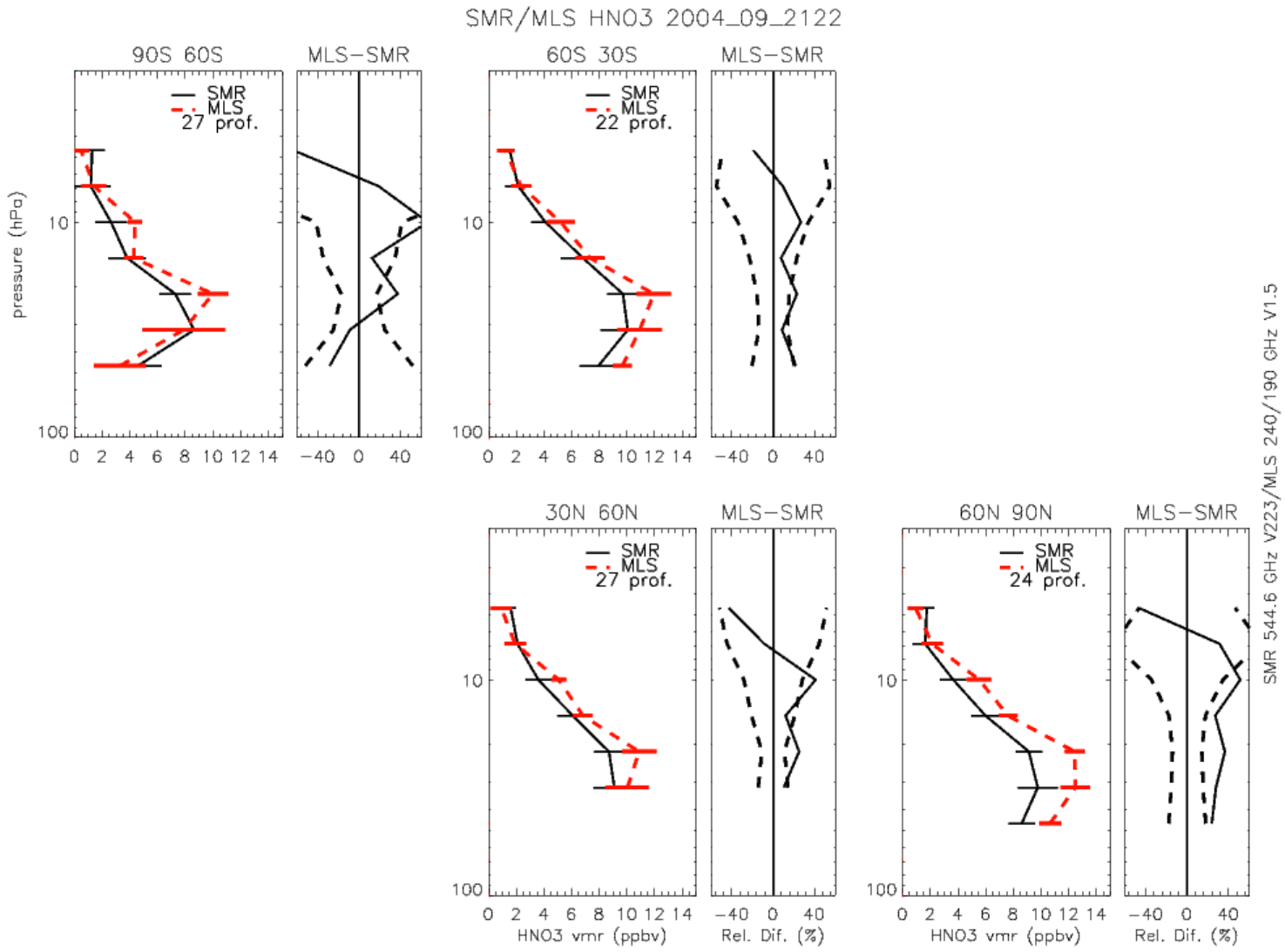
SMR HNO3 /MLS: selection of data

- SMR (ref. code version 223)
  - Measurement response > 0.75
  - Good convergence

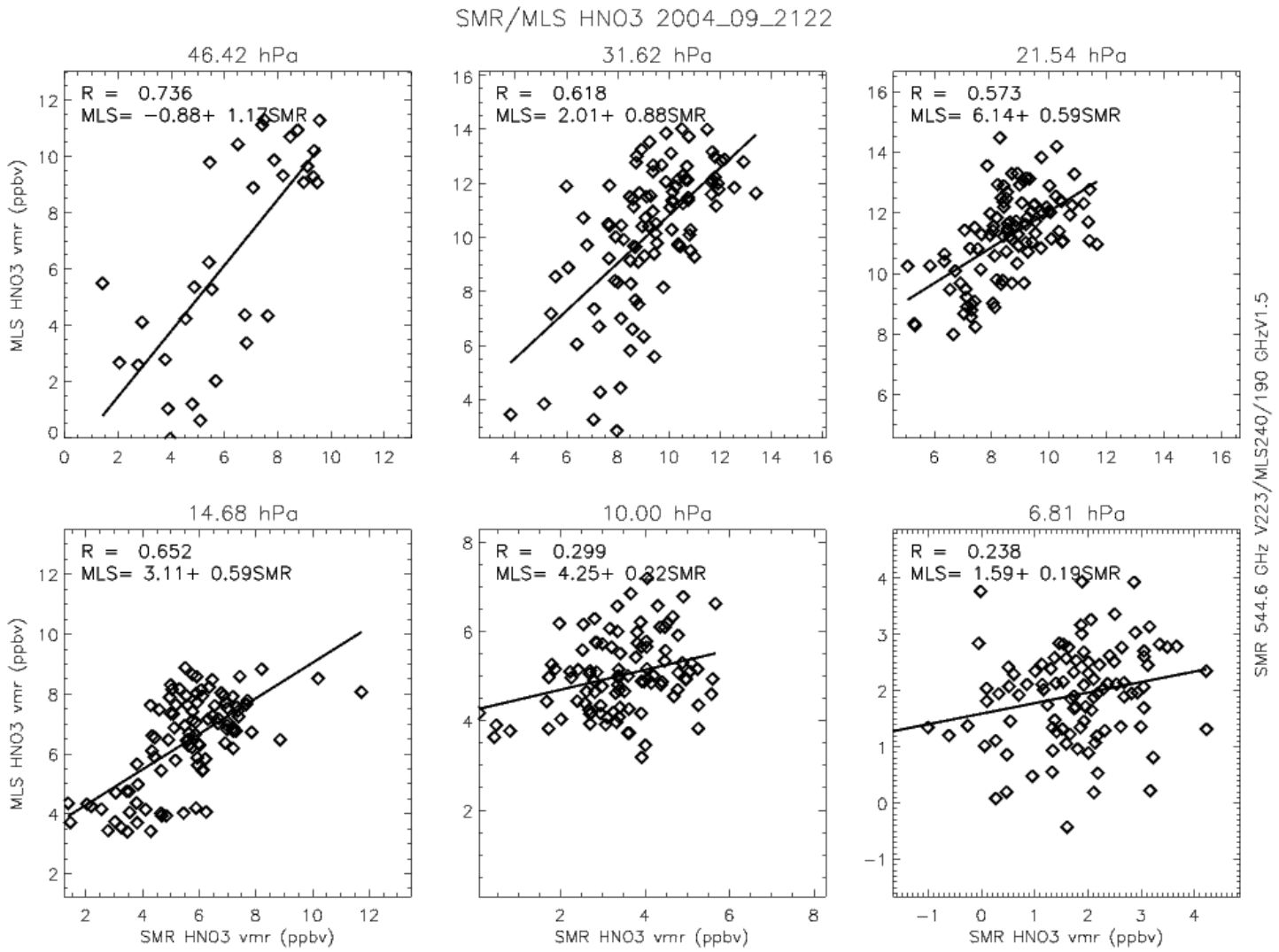
- MLS (V1.5 L2 data quality and description document)
  - Status = 0 + clouds (p < 100 hPa)
  - Precision > 0
  - Quality > 0.17

- Coincidence criteria
  - Distance < 500 km
  - Δt < 6 hours

SMR HNO3 /MLS : zonal means



SMR HNO3 /MLS : correlations



SMR HNO3 /MLS : summary

Mean profiles

- MLS > SMR around the maximum ➔ bias from 20 to 40% (~2 ppbv)

Correlations

- R > 0.6 from 46.4 to 14.7 hPa
- Slope MLS/SMR 0.6-1.2 in this region