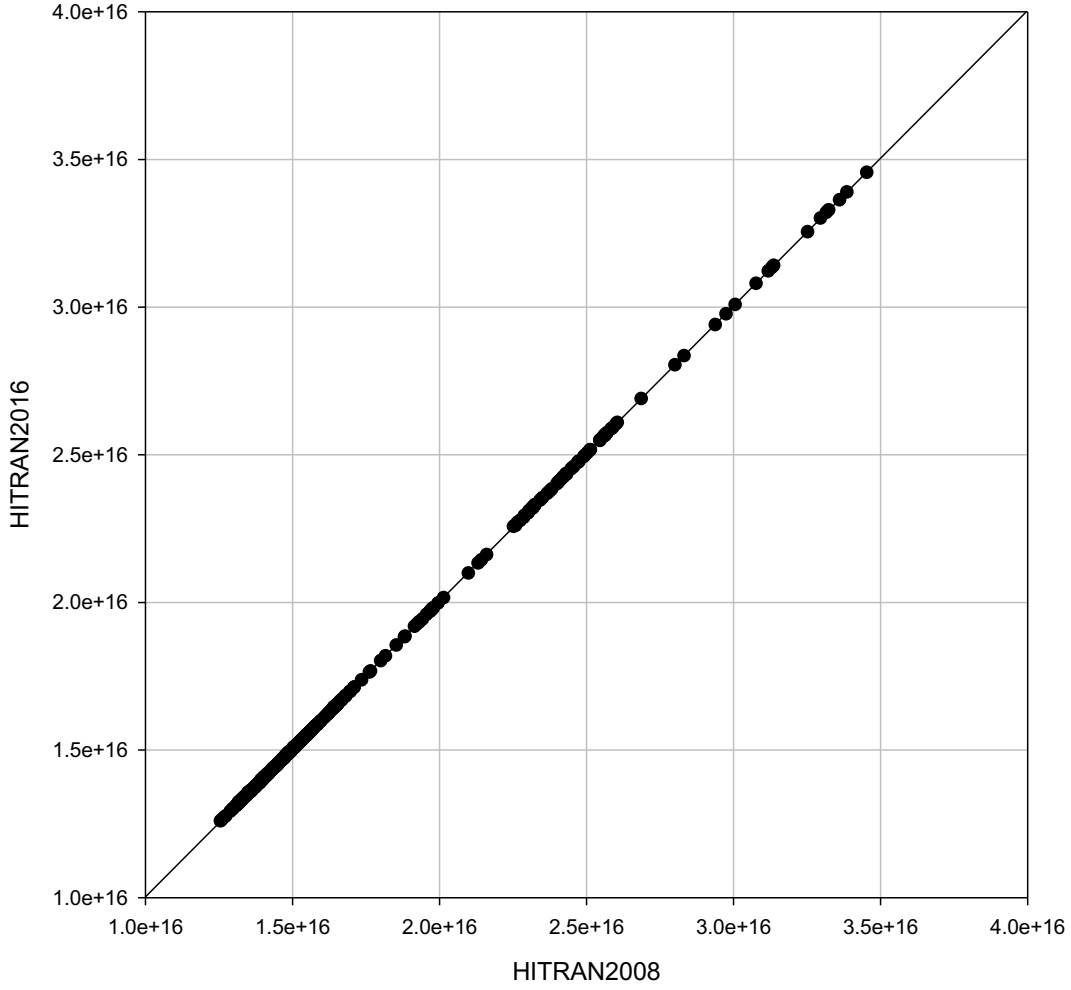
Tests of spectroscopic linelists

Application to Jungfraujoch spectra

emmanuel.mahieu@uliege.be

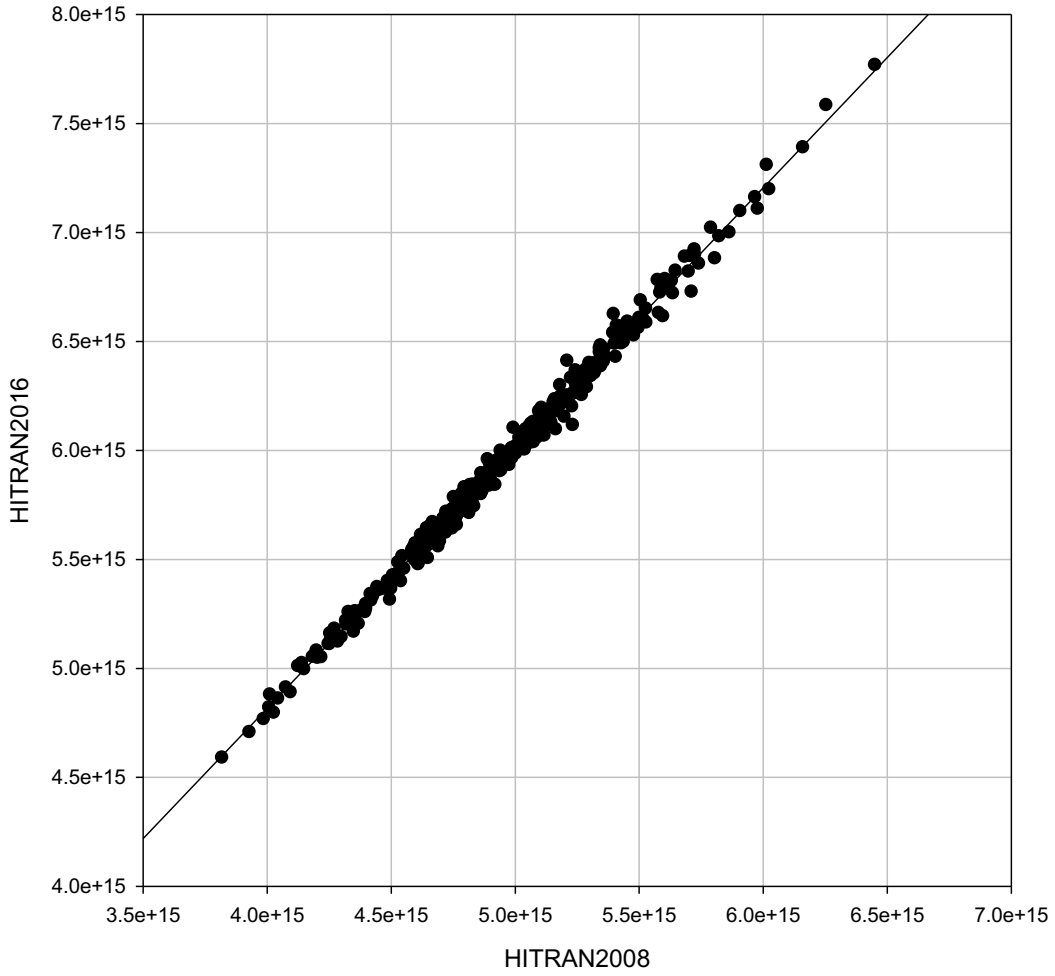
HNO3

Nitric acid – HITRAN2016 vs HITRAN2008



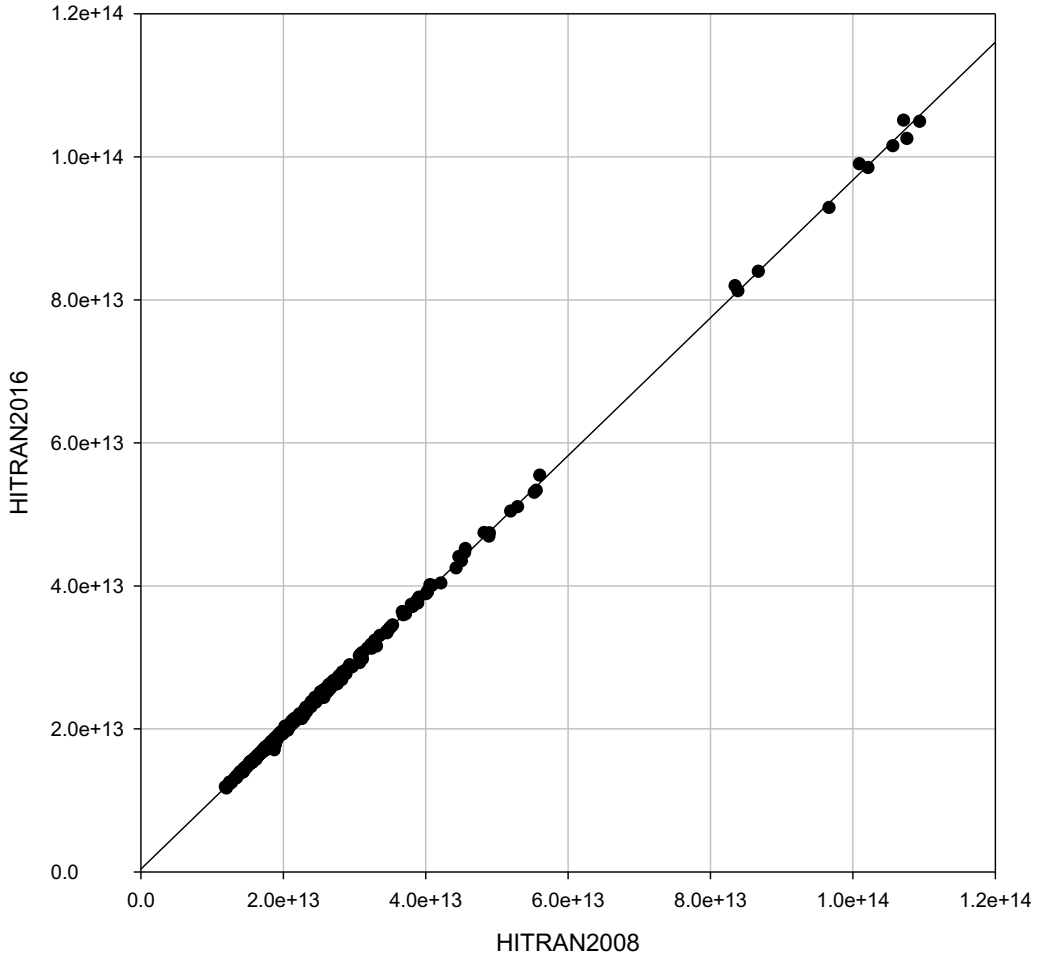
- All Jungfraujoch spectra for 2018
- SFIT-4 v0.9.7.3 or v0.9.4.4
- Compact correlation
- No significant changes in the total columns

Nitric acid – HITRAN2016 vs HITRAN2008



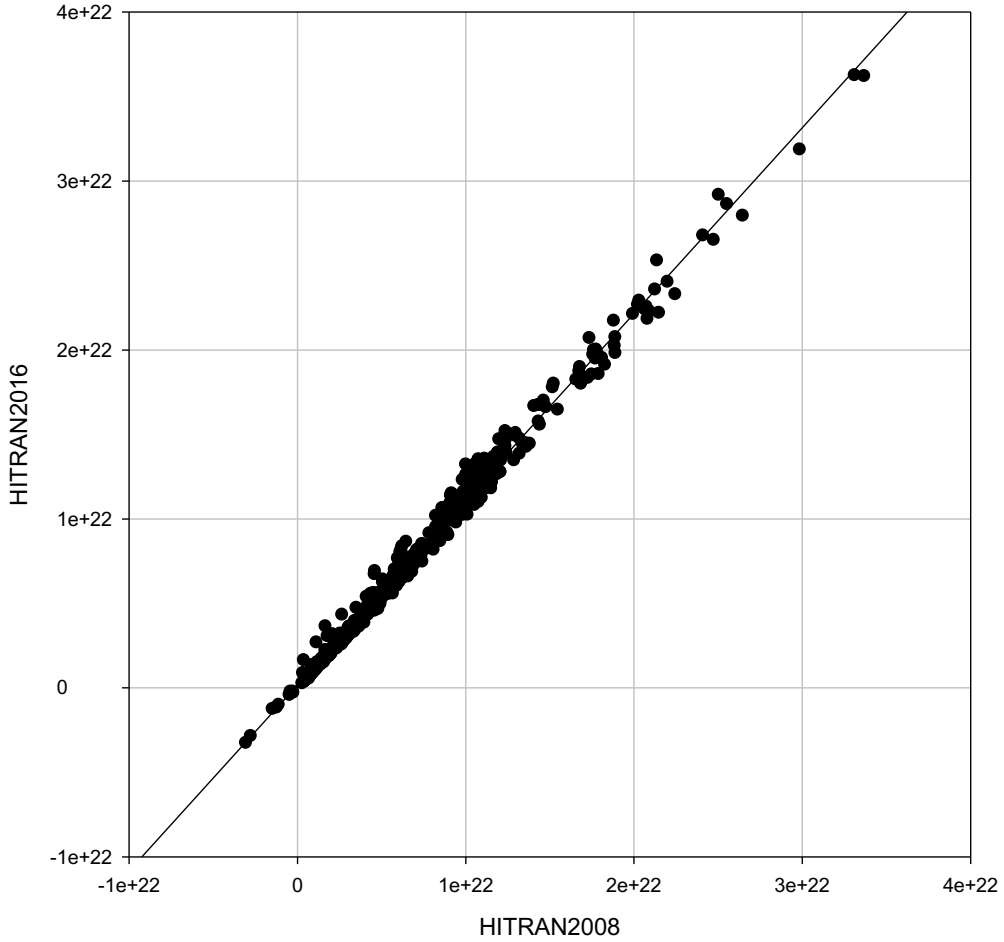
- All Jungfraujoch spectra for 2018
- Systematic bias for OCS, but compact correlation

Nitric acid – HITRAN2016 vs HITRAN2008



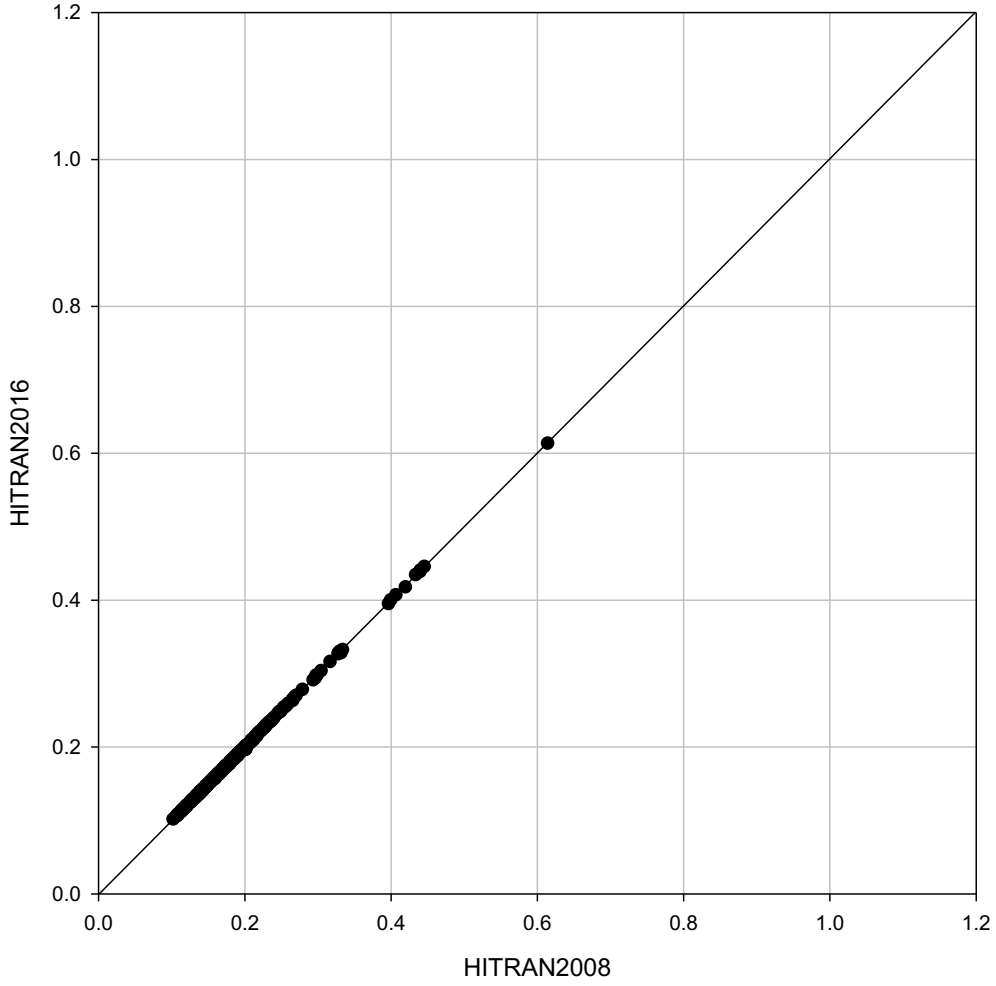
- All Jungfraujoch spectra for 2018
- Compact correlation, ammonia interference unchanged, despite very weak absorptions

Nitric acid – HITRAN2016 vs HITRAN2008



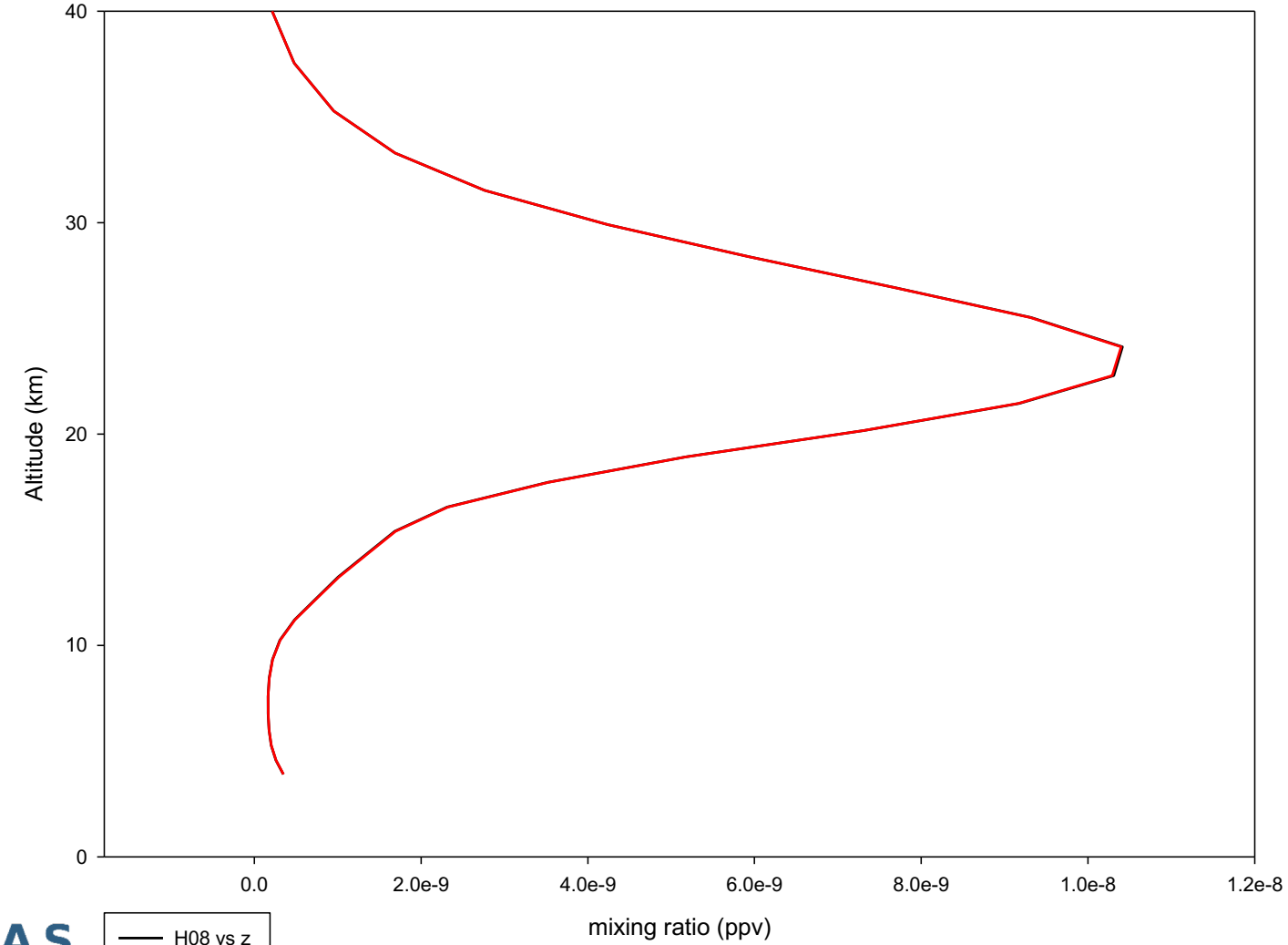
- All Jungfraujoch spectra for 2018
- Compact correlation for H2O (slope ~1.1)

Nitric acid – HITRAN2016 vs HITRAN2008



- All Jungfraujoch spectra for 2018
- Fitting residuals unchanged

Nitric acid – HITRAN2016 vs HITRAN2008



- Mean retrieved profiles

Nitric acid – HITRAN2016 vs HITRAN2008

- Switch to HITRAN 2016 has no impact on nitric acid
- Among the interferences, we only note systematic changes in the H2O and OCS total columns, but with no improvement nor degradation of the fitting residuals

- No tests conducted with ATM.20181101