

## Mapping of Jupiter's tropospheric NH $_3$ abundance using ground-based IRTF/TEXES observations at 5 $\mu$ m

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We report on results of an observational campaign to support the Juno mission. At the beginning of 2016, using TEXES (Texas Echelon cross-dispersed Echelle Spectrograph), mounted on the NASA Infrared Telescope Facility (IRTF), we obtained data cubes of Jupiter in the 1930–1943 cm<sup>-1</sup> (5.14 - 5.18  $\mu$ m) spectral range, which probes the atmosphere in the 1–4 bar region, with a spectral resolution of  $\approx 0.15$  cm<sup>-1</sup> and an angular resolution of  $\approx 1.4''$ . This dataset is analyzed by a code which combines a line-by-line radiative transfer model with a non-linear optimal estimation inversion method. The inversion retrieves the vertical abundance profiles of NH<sub>3</sub> — which is the main contributor at these wavelengths — with a maximum sensitivity at  $\approx 1-3$  bar, as well as the cloud transmittance. This retrieval is performed on more than one thousand pixels of our data cubes, producing maps of the disk, where all the major belts are visible. We will discuss the results presented in our article, namely our retrieved NH<sub>3</sub> abundance maps which can be compared with the distribution observed by Juno's MWR (Bolton *et al.* 2017, Li *et al.* 2017) in the 2 bar region and their significance for the understanding of Jupiter's atmospheric dynamics.