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<b>Authors</b>	MIGLIORINI, Alessandra; Dinelli, Bianca M.; Moriconi, Marialuisa; ALTIERI, FRANCESCA; ADRIANI, Alberto; et al.
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## **JIRAM/Juno limb observations of $H_3^+$ in the mid- and low latitude Jovian atmosphere**

Alessandra Migliorini (1), Bianca M. Dinelli (2), Marialuisa Moriconi (3), Francesca Altieri (1), Alberto Adriani (1), Alessandro Mura (1), Federico Fabiano (2), Giuseppe Piccioni (1), Federico Tosi (1), Giuseppe Sindoni (1), Davide Grassi (1), Scott Bolton (4), Jack Connerney (5), Sushil Atreya (6), Steven M. Levin (7), Jonathan Lunine (8), Jean-Claude Gérard (9), Angelo Olivieri (10), and Christina Plainaki (10)

(1) IAPS-INAF, Istituto di Astrofisica e Planetologia Spaziali, Rome, Italy, (2) ISAC-CNR, Bologna, Italy, (3) ISAC-CNR, Rome, Italy, (4) Southwest Research Institute, San Antonio, Texas, USA, (5) NASA Goddard Space Flight Center, Greenbelt, Maryland, USA, (6) Planetary Science Laboratory, University of Michigan, Ann Arbor, Michigan, USA, (7) Jet Propulsion Laboratory, University of Iowa, Iowa City, Iowa, USA, (8) Cornell Center for Astrophysics and Planetary Science, Cornell University, Ithaca, New York, USA, (9) Laboratoire de Physique Atmosphérique et Planétaire, Université de Liège, Liège, Belgium, (10) Italian Space Agency, Rome, Italy

NASA's Juno mission has been investigating Jupiter since August 2016, providing unprecedented insights into the giant planet's atmosphere. The Jupiter Infrared Auroral Mapper (JIRAM) experiment, on board Juno, performed spectroscopic observations of the  $H_3^+$  emissions in both auroral regions (Dinelli et al., 2017; Adriani et al., 2017; Mura et al., 2017) and at mid-latitudes.

In this work we analyse observations acquired over five orbits by the JIRAM spectrometer during the period from August 2016 to March 2017. In particular, during these observations, the spectrometer slit sampled Jupiter's limb over latitudes ranging from  $60^\circ$  equatorward, in both hemispheres. Limb spectra show typical  $H_3^+$  emission features in the  $3\text{--}4\ \mu\text{m}$  spectral band, used to retrieve the  $H_3^+$  densities and temperatures.

Spatial resolution of the limb observations ranges between 50 and 130 km and is favourable for investigating the vertical distribution of  $H_3^+$ . Vertical profiles of  $H_3^+$  limb intensities, in the  $3\text{--}4\ \mu\text{m}$  spectral band, are presented along with preliminary retrievals of the vertical profiles of  $H_3^+$  volume mixing ratio (VMR). We compare our results with predictions from various atmospheric models.

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