

USING ASIMUT-ALVL TO MODEL THE VIS-NIR SPECTRUM OF JUPITER'S ATMOSPHERE

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MAJIS (Moons And Jupiter Imaging Spectrometer) is one of the key scientific instruments on board the Jupiter ICy Moons Explorer (JUICE), the next mission to the Jovian system. A reliable determination of H₂O and CH₄ densities in the vertical structure and distribution of Jupiter's atmosphere is one of our main goals. In order to achieve this, we implemented the current knowledge of physical and chemical properties of Jupiter in ASIMUT-ALVL to perform simulations with different viewing geometries of the MAJIS instrument from 0.5 μ m to 2.5 μ m. ASIMUT-ALVL is a Radiative Transfer (RT) code developed at BIRA-IASB that has been extensively used to characterize Mars and Venus atmospheres.^{b,c} Our simulations are benchmarked to those from KOPRA, another RT software previously used for the study of Titan, Mars and Jupiter.^d The next step is to validate our model against Jupiter observational data to finally assess the performances of the MAJIS VIS-NIR channel^e to characterize the vertical structure of the Jovian atmosphere.^f

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^bVandaele, A.C., et al., *Optics Express*. 2013, 21(18), 21148

^cVandaele, A.C., et al., *Icarus*. 2017, 295, 1-15.

^dLópez-Puertas, M., et al., *The Astronomical Journal*. 2018, 156.4, 169.

^eCisneros-González, M.E., et al., *SPIE Astronomical Telescopes and Instrumentation*. 2020, 114431L.

^fThis project acknowledges the funding provided by the Belgian National Scientific Research Fund (FNRS by its acronym in french) through the Aspirant-Renewal Grant "34828872 MAJIS detectors and Impact on Science".