



ID de Contribution: 15

Type: **Oral presentation**

Small icy bodies revealed by JWST : a glimpse into the early outer solar system

mercredi 28 février 2024 17:15 (15 minutes)

Since their discovery about 30 years ago, observations of Trans-Neptunian Objects (TNOs) have been limited. These small icy bodies orbiting beyond Neptune were observed in the 0.5 to 2.5 μm range, where only bands of water and methanol ice could be detected and identified on non-dwarf planets (diameter < 800 km). In autumn 2022, a large JWST program began observing 54 TNOs, in the 0.7 to 5.1 μm range, providing an unprecedented look at their surface composition. We found that TNO surfaces fall into 3 spectral types whose characteristics reflect their distance to the sun before the planetary migration which placed them in their current orbit (Pinilla-Alonso et al. 2024). CO_2 was detected across all objects (De Prá et al. 2024), in abundances correlated to their spectral types. I am now studying the distribution of CO across 38 objects and investigating its possible irradiation origin by comparing them to ion irradiation experiments on ices, that I conducted at IAS and IJCLab in Orsay.

Astrophysics Field

Planetology (including small bodies and exoplanets)

Day constraints

Available all day on wednesday 28 and friday 1.

Available only after 3 PM on thursday 29

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Classification de Session: Session 4