CDD 2026

ID de Contribution: **54**   Type: **Poster**

Hyperspectral remote sensing of arid environments on Earth and on Mars

lundi 30 mars 2026 13:40 (20 minutes)

The Asal-Ghoubbet rift in the Republic of Djibouti serves as an exceptional natural laboratory of planetary interest, characterized by complex igneous lithology, hydrothermal alterations, and Holocene evaporitic deposits. The EnMAP (Environmental Mapping and Analysis Program) hyperspectral mission provides a critical opportunity to characterize these surfaces through high-resolution spectroscopy across the VNIR and SWIR domains. While standard Level-2A surface reflectance products are designed for direct scientific use, their application in this arid volcanic context reveals significant limitations, including spectral artifacts in the water vapor absorption bands and inconsistencies in atmospheric masking. These issues can compromise the identification of diagnostic mineral absorption features essential for quantitative mapping. To address these challenges, this study implements a dedicated atmospheric correction workflow starting from Top-of-Atmosphere (L1C) radiance data. By leveraging the MODTRAN6 radiative transfer model, we perform site-specific simulations to account for local atmospheric conditions and acquisition geometry. This approach aims to minimize residual artifacts and ensure physically consistent surface reflectance. Our results demonstrate that customized processing of EnMAP data significantly improves mineralogical classification and spectral identification, providing a robust baseline for comparative remote sensing studies in extreme environments.

Speaker information

PhD 1st year

Auteur: LANGOUET, Robin (IPGP)

Classification de Session: Poster

Classification de thématique: Earth and Environment