



ID de Contribution: 35

Type: **Oral presentation**

## **Martian dust dynamics constrained by OMEGA/Mars Express orbital data.**

*jeudi 11 février 2021 15:00 (15 minutes)*

Dust is omnipresent within Mars's atmosphere and at its surface. These small (micrometer-sized) particles are one of the major features of Mars modern climate and may also represent a key factor controlling some current surface properties such as composition and activity. Some dust characteristics are still imperfectly unknown, such as the link between dust storms and the seasonal dark flows on Martian surface slopes.

In the first part of the Martian dust dynamics study, we use the observations of the imaging spectrometer OMEGA onboard Mars-Express (orbiter). This instrument has observed the Martian surface during three Martian years (2004-2010) in the 0.3-5.1  $\mu\text{m}$  spectral range. We have developed a new method to detect the presence of dust in the atmosphere in this dataset, which is based on the decrease of the 2  $\mu\text{m}$   $\text{CO}_2$  gas absorption caused by dust scattering. A preliminary version of the detection algorithm (automatized version of the detection method), apply to 10% of the dataset, allow to recover some temporal and spatial characteristics of the dust, such as the typical seasonal atmospheric dust variations. This data also illustrates potential time and spatial correlations between seasonal dark flows and the dust activity.

### **Field**

Planetology (including small bodies and exoplanets)

### **Day constraints**

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**Classification de Session:** Talk

**Classification de thématique:** Astrophysics