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Imaging spectroscopy of Millbillillie, looking forward to Vesta.

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During the on-ground calibration campaign of VIR-MS, spectra of the Millbillillie meteorite have been collected using the calibration facility of the Galileo Avionica (Fi). VIR-MS hyper-spectral cube cover an area of about 65x65 mm on the sample with a spatial resolution of about 0.25 mm/pixel and spectral resolution of 1.8nm in the visible range (330nm - 1070nm) and 9.5nm in the infrared range (1070nm - 2600nm). In the data set acquired we have selected a hyper-spectral image to be analyzed of 240x220 spatial pixel corresponding to 52800 spectra.

We have applied statistical methods (mostly MGM) in order to find the end-members of the sample and the corresponding band parameters and then we have studied the distribution of such parameters along the sample. Finally we have confronted the result with the one obtained applying the same method to other data-set of the same sample in similar conditions.

This activity was done to support the scientific interpretation of the hyper-spectral data produced by VIR-MS, the imaging spectrometer aboard the Dawn mission to minor planets 1 Ceres and 4 Vesta.