A Cloud-Tracking Tool For Planetary Orbiter Images

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During their operations phase, planetary missions continuously produce a wealth of data that tend to overwhelm research teams. Spectral imagers, in particular, produce data cubes in which the wavelength dimension adds to the two spatial dimensions. Tracking of atmospheric features in order to derive winds and the construction of global maps from such large data volumes becomes particularly time-consuming if done manually. This highlights the importance of automated procedures capable of analysing sequences of data cubes with minimal user interaction. A tool for cloud tracking for such a purpose is currently under development in our group. In its present state it is based on synthetic images and uses a simple method of multiple matrix comparison to derive wind components. Deriving winds from data from the Venus Express - Visible and InfraRed Thermal Imaging Spectrometer (VIRTIS) instrument will be a possible application. We shall present an overview of the method, its benchmarking and the current status and future development of the project.

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