

## Gravity Waves in the Martian Atmosphere detected by the Radio Science Experiment MaRS on Mars Express

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Gravity waves are a ubiquitous feature in all stably stratified planetary atmospheres. They are known to play a significant role in the energy and momentum budget of the Earth and they are assumed to be of importance for the redistribution of energy. This high vertical resolution of the radio occultation profiles from the MaRS experiment on Mars Express provides the unique opportunity to study small scale vertical wave structures in the Martian lower atmosphere. These small scale temperature perturbations are most probably caused by gravity waves (buoyancy waves) produced by the displacement of air masses flowing over elevated topographical features or other atmospheric sources like convection in the surface boundary layer or wind shear. A study of the global distribution of gravity waves provides insight into possible source mechanisms, local time dependencies, seasonal dependencies and/or topographical dependencies.

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