



Atmospheric tides on Mars in the Phoenix landing season

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We characterize the atmospheric tides on Mars in the season of the Mars Phoenix landing using data from the Mars Climate Sounder and the Mars Climate Database. We interpret the fluctuations observed in the atmospheric temperature profile that was derived from the reconstructed entry, descent and landing trajectory of the Mars Phoenix lander. Both migrating and non-migrating tides are studied. Throughout our research we observe tidal modes with vertical wavelengths that deviate from what is predicted by classical tidal theory. We show that these seem to be correlated with a nonzero zonal mean vorticity.