



Interaction of Solar Wind With the Moon: Results From Hybrid Modeling and the SPEDE Instrument on SMART-1

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SPEDE (Spacecraft Potential, Electrons, and Dust Experiment) is a dual Langmuir-probe instrument on board SMART-1, providing information about plasma flux, wave activity, and dust particle impacts on the spacecraft body. SPEDE has been continuously operated for more than two years, collecting data from initial orbit around moon, in the cruise phase, and finally in the Lunar orbit.

A 3D hybrid simulation code has been used in order to study interaction of Solar Wind plasma with the Moon and the results can be compared with SPEDE measurements. The model indicates features associated with interaction of Solar Wind with the Moon, and those can be compared with SPEDE measurements. Although the performance of the SPEDE instrument is primarily suited for monitoring of dense plasma and less accurate in low-density Solar Wind, there are occasions where at least a qualitative counterpart to simulations can be found in the SPEDE data.

In this poster we present the simulation model, discuss the results, and compare them with measurements from SPEDE.