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Electro-magnetic measurements by MELOS lander

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No measurement of atmospheric electric field and electromagnetic waves on the ground in Mars has been made, though it could be dedicated not only to understanding of the electric current research but also to the meteorology, solid planet and space physics. DC electric filed near surface is considered to play an important role in initiating dust devil. The electromagnetic wave measurement makes it possible to know the location and the quantitative strength of dust devils wind with few observation sites. Though only one observation site enables us to determine the discharging location, two or three sites improve the accuracy significantly. This measurement also contributes to the studies both on the crust and the upper atmosphere. Though Exo Mars will carry out a simple observation of electric filed, most of the targets will remained unexplored. We propose a simple and promising instrumentation set for the DC and AC electromagnetic observation making use of MELOS lander. Here we also discuss the coordinated observation with atmospheric orbiter.

Keywords: Mars, Lander, MELOS, electro-magnetic, measurement