

A UHF SAR Mission to Mars

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Abstract -- A Mars orbiting mission carrying a UHF SAR to map the hidden surface of Mars is described. UHF SAR is shown to be an ideal selection for probing the thick dust mantle, which covers more than a third of the Martian surface. Mapping is carried out in both HH and VV polarizations, with the comparison of the two expected to yield a distinction between surface and subsurface features up to 5m depth. Some Repeat-pass Interferometry data is collected in an investigation of whether the Martian surface is subject to temporal deformation.

This paper describes the technical design of the UHF SAR for global mapping of Mars and the characteristics of the proposed mission to achieve this goal.

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