

Study of MARS for Explorations of Landing Sites using Microwave Remote Sensing

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The location where we plan to send Human Mission the knowledge of Atmospheric conditions, the local wind conditions and physical temperature along with Soil Condition has to be obtained and its effect on the mission has to be studied. For this the first the knowledge about the behaviour of Soil has to be obtained in the Laboratory. This can be done using Terrestrial Analog of Martian Soil. In Laboratory the conditions as far as possible could be created and the behaviour of Soil (TAMS) could be studied by creating a reduced Scale model in Laboratory. The dust devil, the streaks both dark and bright could be created in laboratory and its effect on the Soil could be studied.

Also before human mission one can send Microwave Sensors to Orbit Mars to provide the information regarding Soil Moisture conditions, the wind speed and direction and also regarding dust devils. The Microwave Sensors will provide information about the surface features of Martian Surface in presence of dust storms. The atmosphere constituents like CO_2 also could be monitored. The landers and rovers that will land on Martian Soil also could be equipped with Microwave Sensors so that detailed in depth information about Soil and surrounding including measurement of CO_2 and frost created by CO_2 could be mentioned.

This presentation will high highlight the role of Microwave Sensors in exploration of MARS and the type of Sensors that could be used for providing information about MARS and give some details of the Laboratory experiments using Terrestrial Analog of Martian Soil.