Global-COE Frontier Seminar

MARSIS (MarsExpress ESA mission) and SHARAD (MRO NASA mission) radars to study Martian surface and subsurface.

Speaker : Prof. Wlodek Kofman (Research Director at CNRS)
Affiliation : Centre National de la Recherche Scientifique (CNRS), France
Date & Time : 13:00 - 14:30 Oct 22, 2009 on Thursday
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Abstract:

After the presentation of MARSIS and SHARAD radar system we discuss the signal processing that is necessary to extract data from the reflected signal. The most important effect is to correct the ionospheric dispersion of the signal. Once this is done, the study of the surface and subsurface echoes is possible. The Total Electron Content of the ionosphere is a sub-product of this processing. We show some results of TEC correlated with the crustal magnetic field. The planet mapping progress is presented. The observations of regions of the south and north polar layered deposits are discussed. The maps of the interior of polar deposits are examined. The dielectric mapping of polar ices is shown and the measurements of the thickness of the south polar residual cap are described. Finally the reflectivity of the surface and its correlation with other type of observations are shown.