EPSC Abstracts,
Vol. 2, EPSC2007-A-00374, 2007
European Planetary Science Congress 2007
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GPR study of Martian analogue terrains: goal, results and perspectives.

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Radar is one of the more promising geophysical techniques to explore Martian subsurface. For two years Marsis has demonstrated the interest of orbital radar sounding. For the local measurements, GPR's are planed in future rover missions to monitor in detail complex geologic terrains. In regard of the novelty for Mars but not in genereal of this method, data reduction and instrument science require a large effort and especially measurement campaigns on Martian analogue terrains. Indeed, field tests are the unique way to characterise instruments, to test processing and to validate our interpretation capability.

This presentation starts with the discussion of field test problem. The objectives are presented by regards to the existing and future missions. The choice of Martian Radar analogue terrain is discussed and our field test program is presented. The second part of this talk presents the measurement at Crater of the Moon (Idaho, August 06). This arid volcanic terrain has been sounded at frequency from 8 MHz to 900 MHz. The data demonstrate our capability to understand this complex geology and the limitation of this understanding.