

SPACE LIFE SCIENCES SYMPOSIUM (A1)  
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MARS DESERT RESEARCH STATION MDRS-CREW 77: TERRESTRIAL FIELD RESEARCH  
INVESTIGATING ORGANICS AND BIOMOLECULES

**Abstract**

The goal of the EuroGeoMars campaign in Utah at the Mars Desert Research Station (MDRS) in February 2009 was to perform field research and to demonstrate instrument capabilities in support of current and future Mars missions, such as MarsExpress, Mars Science Laboratory and Exomars. The MDRS Crew 77 collected soil samples from different locations in the vicinity of the MDRS station in

Utah from the Morrison formation and investigated those soils in the laboratory with Terra XRD/XRF (X-ray diffraction/X-ray fluorescence) from InXitu Inc. and a Raman InPhotonics (LAS-750-300 Class 3b embedded Diode Laser, 785 nm wavelength) instrument. We also measured selected soil properties including pH value and elemental composition of Ca, K, P, Mg, and nitrate directly in the field using colorimetric chemical reactions (LaMotte Soil Testing System). Salt concentrations were estimated with a conductivity probe. According to this combined measurements we selected soils that most likely trigger oxidative processes when incubated with chemometric sensor arrays similar to the Mars Oxidation Instrument (MOI), selected as payload component for the European Exomars mission. We present results on the concentration and degradation processes of organic compounds from the MDRS campaign and subsequent laboratory analyses. The reported field investigations are crucial to support future endeavors to search for organic compounds on Mars.