



## **Core Petrophysical Services for IODP Mission Specific Platform Expeditions**

Louise Anderson (1), Sarah Davies (1), Annick Fehr (2), Jennifer Inwood (1), Johanna Lofi (3), and Sally Morgan (1)

(1) Borehole Research Group, Department of Geology, University of Leicester, , Leicester, United Kingdom (sm509@le.ac.uk), (2) Institute of Applied Geophysics and Geothermal Energy, E.ON Energy Research Center, RWTH Aachen University, Aachen, Germany, (3) Geosciences Montpellier, Universite Montpellier 2, Montpellier, France

Petrophysical and downhole logging services for Mission Specific Platform (MSP) Expeditions (310, 313 and 325) are provided by the European Petrophysics Consortium (EPC), part of the ECORD Science Operator (ESO). EPC comprises the universities of Leicester (lead), Montpellier and Aachen and has a 25 year involvement with ODP/IODP.

The core petrophysical data is used in tandem with the downhole logging data (also provided by EPC) and other geological data to help identify key boundaries and trends in individual boreholes as well as allowing correlation between boreholes and formations.

There are 2 phases of core petrophysical services provided by EPC. One set of measurements is taken during the offshore phase of the Expedition using a Geotek Multi-Sensor Core Logger (MSCL) provided by Leicester. The MSCL provides high resolution whole-core logging data including gamma density, P-wave velocity, non-contact resistivity and magnetic susceptibility, as well as temperature and core diameter. A second phase of measurement collection is conducted onshore prior to and during the Onshore Science Party (OSP) which is hosted by the University of Bremen. Measurements taken on whole cores prior to the OSP include natural gamma radiation (where appropriate (Exp. 302 and 313)) and discrete thermal conductivity. Once the cores are split, colour reflectance spectrophotometry and high resolution line scanning is undertaken. In addition, measurements on discrete samples from the cores are also conducted. These discrete measurements include p-wave velocity and moisture and density.

Core petrophysical measurements for MSP expeditions are contracted to meet the IODP minimum measurement requirements as well as addressing the specific scientific objectives of an expedition where possible. These measurements are essential in helping provide a means of testing hypotheses and ground-truthing remotely acquired data.