



## **Drilling informatics: data-driven challenges of scientific drilling**

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The primary aim of scientific drilling is to precisely understand the dynamic nature of the Earth. This is the reason why we investigate the subsurface materials (rock and fluid including microbial community) existing under particular environmental conditions. This requires sample collection and analytical data production from the samples, and in-situ data measurement at boreholes. Current available data comes from cores, cuttings, mud logging, geophysical logging, and exploration geophysics, but these datasets are difficult to be integrated because of their different kinds and scales. Now we are producing more useful datasets to fill the gap between the existing data and extracting more information from such datasets and finally integrating the information. In particular, drilling parameters are very useful datasets as geomechanical properties. We believe such approach, 'drilling informatics', would be the most appropriate to obtain the comprehensive and dynamic picture of our scientific target, such as the seismogenic fault zone and the Moho discontinuity surface. This presentation introduces our initiative and current achievements of drilling informatics.