

## **Petroleum Systems Analysis (5 days)**

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### **Business context:**

Petroleum systems analysis is an important tool in hydrocarbon exploration. The understanding of charge mechanisms forms part of this work and is a key working area for petroleum geochemists. Geochemical data on source rocks, oil, and gas constitute input as well as calibration of hydrocarbon charge models. The prediction of fluid type (oil or gas; quality of the oil) and volumes generated in the basin, or present in un-drilled traps, relies on the understanding of geochemistry and petroleum charge systems. The focus of this course lies in integration between geology and geochemistry.

### **Who should attend:**

Petroleum geologists, geochemists and geophysicists, involved with petroleum exploration.

### **Content of the program:**

- Basins and Petroleum Systems
- Source rock formation processes
- Recognition & evaluation of source rocks (Rock Eval/TOC, microscopy, etc)
- Maturity
- Basic organic chemistry of oil and gas
- Geological information from oil and gas analysis
- Oil-oil and oil-source rock correlation
- "Oil families": recognizing different charge systems within a single basin
- Migration of hydrocarbons
- Gas geochemistry
- Simple charge prediction
- Surface geochemistry as exploration tool

### **Learning, methods and tools:**

At the end of the 5-day course participants will have gained basic insight into essential geochemical concepts, and have gained basic skills in applying geochemical tools. Exercises are aimed at reinforcing the acquired knowledge in a practical context. The major interpretation exercises are aimed at providing real hands-on experience. Geologists and geochemists will have learned each others language.

*Note: A 3-day field-trip can be organized on request, which demonstrates the organic geochemical concepts based on outcrops.*