



2017 – Principles and Practice of Stable Isotope Geochemistry in Earth and Environmental Geosciences

The aim of this short course is to allow non-experts to gain an understanding of the use of stable isotopes in Earth and environmental geosciences, through lectures, workshops and hands-on lab work. At the end of the 2 days the participants should be able to:

- Have an understanding of the general principles of isotope geochemistry including notation and standardization.
- Understand the water/meteorological cycle in particular how rainfall isotope composition are determined by climate, how O, H, and C stable isotope compositions in the modern day waters provide a framework for the interpretation of these isotopes in the past archived in geological materials.
- Understand the application of stable isotope geochemistry (O, H, C and S) to a variety of geological settings, including volcano-magmatic systems, ore deposits and geothermal systems.
- Gain knowledge on the global cycles of C, N and S.
- Understand how isotope data are interpreted in terms of climate/environment from some of the most common archives, including lakes, trees, oceans, speleothems, archaeological materials and from deep time geological successions.
- Understand how N, C, S and H isotope analysis of biological tissues can be utilised to elucidate food webs and animal migration.
- Understand how isotopes (N, O) can be used to trace nutrient cycles within both aquatic and soil systems and in doing so inform us about sources of environmental pollution and past environmental change.

Laboratory practicals will allow participants to gain experience and knowledge of mass spectrometry and how isotope data is acquired. **These will be tailored to delegate's own areas of interest** after acquisition of the basics of stable isotope geochemistry.

A full tour of the Stable Isotope Facility at the British Geological Survey will be included in the course.

Course location: British Geological Survey, Keyworth, Nottingham

Date & Time: 1st/2nd November 2017

Course presenters: Prof Adrian Boyce, Dr Angela Lamb, Prof Melanie Leng, Dr Jason Newton, Dr Andrew Smith

To register interest in attending please contact Theresa Mankelow (BGS Training) <http://www.bgs.ac.uk/staff/sendMail.cfm?id=0074> and Melanie Leng mjl@bgs.ac.uk (note the course maximum is 30 participants, and a minimum of 6 is required for the course to run).