Stable isotope and their applications in carbonate paleoenvironment, chemostratigraphy and diagenesis

Milano - 2-5 May 2017 - Short course (4 cfu)

Stable isotope and their applications in carbonate paleoenvironment, chemostratigraphy and diagenesis

PROGRAM
Introduction
Decay mechanisms
Fractionation of stable isotopes
Hydrogen and oxygen
Carbon, Sulfur, Strontium
Isotope signatures of diagenetic cements
Evaluation of carbonate preservation
Applications of stable isotopes in chemostratigraphy, paleoclimatology, paleoceanography, diagenesis

Prof. Karem Azmy
Department of Earth Sciences
Memorial University, Canada
Training objectives:
The course will provide an introduction to aspects of stable isotope geology particularly those of carbon, oxygen, strontium, and sulfur and their applications in geosciences.
The student will be able to understand how to evaluate the reliability of measured isotope signatures using pre-screening petrographic (regular thin sections, cathodoluminescence, and scanning electron microscope - technique principles with examples will be explained) and geochemical (trace element composition) approaches.
Examples (case studies) of primary/near-primary signals of various isotopes will be discussed as a part of training on the reconstruction of paleoenvironmental conditions (paleoceanographic and paleoclimatic patterns).
On the other hands, the course will explain the utilization of geochemical signatures of secondary calcite phases (e.g., cements), particularly those of oxygen isotopes and trace elements, for the reconstruction of the geochemical composition of the parent diagenetic fluid. This requires the combination of microthermometric measurements with the stable isotopes (case studies will also be discussed), a techniques that will be also introduced during the course.
TIMETABLE

2 May 9.30-12.30 and 14.30-17.30 Aula M01 (Via Mangiagalli 31)

3 May 9.30-12.30 Aula 110 (Via Celoria 20)
3 May 14.30-17.30 Aula Stoppani (Via Mangiagalli 34)

4 May 9.30-12.30 Aula M01 (Via Mangiagalli 31)
4 May 14.30-17.30 Aula Stoppani (Via Mangiagalli 34)

5 May 9.30-12.30 and 14.30-17.30 Aula Taramelli (Via Mangiagalli 34)
1. Via Celoria 2
2. Via Celoria 10
3. Via Celoria 16
4. Via Celoria 20
5. Via Celoria 22
6. Via Celoria 26
7. Via Golgi 19
8. Via Venezian 21
9. Via Venezian 15
10. Via Venezian 1
11. Via Mangiagalli 37
12. Via Mangiagalli 31
13. Via Mangiagalli 34
14. Via Mangiagalli 32
15. Via Mangiagalli 14
16. Via G. Colombo 46
17. Via G. Colombo 71
18. Via Saldini 50
19. Via Botticelli 23
20. Via A. Vanzetti 5
21. Via Peroni 21
22. Via Clericetti 2
23. Via C. Pascal 38
24. Via C. Pascal 36