

## PhD School of Earth Sciences

### Short Course

#### **Isotope (carbon and strontium) stratigraphy of shallow-water carbonates: principles, methods and case histories.**

*12h of lectures and exercises – 3 ECTS credits*

**Prof. Mariano Parente**

**27-28-29 April 2021**

**Prerequisites:** Basic knowledge of carbonate sedimentology, paleontology, geochemistry.

#### **Short Program of the Course:**

Course introduction: why isotope stratigraphy (30 min)

1. Strontium isotope stratigraphy (2h 30 min lectures + 3h exercise)

- Principles, methods and applications
- The problem of sample selection and diagenetic screening
- Discussion of case histories: critical evaluation of papers applying strontium isotope stratigraphy to shallow-water carbonates
- Exercise: sample selection and data evaluation

2. Carbon isotope stratigraphy (3h lectures + 3h exercise)

- Principle, methods and applications
- Problems and limitations in the application of carbon isotope stratigraphy to shallow-water carbonates
- Discussion of case histories: critical evaluation of papers applying carbon isotope stratigraphy to shallow-water carbonates
- Exercise: evaluation and interpretation of datasets of carbon isotope stratigraphy

#### **Suggested introductory readings:**

McArthur, J. M., Howarth, R. J., Shields, G. A. & Zhou, Y. (2020). Chapter 7 - Strontium Isotope Stratigraphy. In: Geologic Time Scale 2020 (vol. 1, pp. 211–238). Elsevier.

<http://doi.org/10.1016/B978-0-12-824360-2.00007-3>

Cramer, B. D. & Jarvis, I. (2020). Chapter 11 - Carbon Isotope Stratigraphy. In: Geologic Time Scale 2020 (vol. 1, pp. 309–343). Elsevier.

<http://doi.org/10.1016/B978-0-12-824360-2.00011-5>

*The maximum number of participants is 15. For registering and receive further information on the short course, please contact Prof. Mariano Parente ([mariano.parente@unina.it](mailto:mariano.parente@unina.it), 0812538163)*