

## Short course on “Detrital geochronology and thermochronology” (16 hours - 2 credits)

*Detrital thermochronology studies are increasingly employed to investigate the erosional evolution of mountain belts and perform paleotectonic reconstructions starting from the analysis of sedimentary rocks. However, simple predictions of the detrital thermochronology approach are often in conflict with observations in sedimentary basins. In this short course, we illustrate geo/thermochronologic methods that are commonly applied to the analysis of sedimentary rocks (zircon U-Pb, mica Ar-Ar, apatite and zircon fission-track and (U-Th)/He, trapped-charge thermochronometry) and we discuss the main factors that control the final complexity of the detrital geochronology record in a sedimentary basin. The basic principles illustrated in the first part of the course are applied to case histories from the main orogenic belts.*

This short course is part of the teaching plan of the PhD programme in Chemical, Geological and Environmental Sciences at University of Milano-Bicocca (Italy). It will be held on Webex. It is free and open to advanced graduate students and post-docs from any university. To participate, send an email to [marco.malusa@unimib.it](mailto:marco.malusa@unimib.it) by the end of December 2020. For the sake of a better organization, you are asked to specify your current position and ongoing research.

### Schedule

Lecture 1 – Monday 18<sup>th</sup> January 2021, 2 PM – 4 PM CET:

**Introduction. Zircon U-Pb geochronology** - Lecturer: Igor M. Villa (University of Milano-Bicocca)

Lecture 2 – Wednesday 20<sup>th</sup> January 2021, 2 PM – 4 PM CET:

**Mica Ar-Ar geochronology** - Lecturer: Igor M. Villa (University of Milano-Bicocca)

Lecture 3 – Friday 22<sup>nd</sup> January 2021, 2 PM – 4 PM CET:

**Trapped-charge thermochronometry** - Lecturer: Georgina King (University of Lausanne)

Lecture 4 – Monday 25<sup>th</sup> January 2021, 2 PM – 4 PM CET:

**(U-Th)/He thermochronology** - Lecturer: Massimiliano Zattin (University of Padova)

Lecture 5 – Wednesday 27<sup>th</sup> January 2021, 2 PM – 4 PM CET:

**Fission-track thermochronology** - Lecturer: Marco G. Malusà (University of Milano-Bicocca)

Lecture 6 – Friday 29<sup>th</sup> January 2021, 2 PM – 4 PM CET:

**Sedimentology of detrital geo/thermochronology** - Lecturer: Marco G. Malusà (University of Milano-Bicocca)

Lecture 7 – Monday 1<sup>st</sup> February 2021, 2 PM – 4 PM CET:

**Detrital thermochronology within a stratigraphic framework** - Lecturer: Marco G. Malusà (University of Milano-Bicocca)

Lecture 8 – Wednesday 3<sup>rd</sup> February 2021, 2 PM – 4 PM CET:

**Application to orogenic belts: case studies** - Lecturer: Marco G. Malusà (University of Milano-Bicocca)