



## Short course "Detrital geochronology and thermochronology" edition 2024 (16 hours)

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 program in Chemical, Geological and Environmental Sciences at the University of Milano-Bicocca (Italy). It is free and open to advanced graduate students and post-docs from any university. It will be held in mixed mode, in the classroom and on Webex to allow for the participation of students from other universities. To participate, fill in the Google form at the link <u>https://forms.gle/gNfQtdmBzuBeSHrb7</u> by the end of December 2023. For the sake of a better organization, you are asked to specify your current position and ongoing research. For further information, mail to <u>marco.malusa@unimib.it</u>

Marco G. Malusà

## Schedule

Lecture 1 – Tuesday 16<sup>th</sup> January 2024, 3 PM – 5 PM CET (room U6-26 and Webex): Introduction. Zircon U-Pb geochronology - Lecturer: Igor M. Villa (University of Milano-Bicocca) Lecture 2 – Wednesday 17th January 2024, 3 PM – 5 PM CET (room U16-14 and Webex): **Mica Ar-Ar geochronology** - *Lecturer*: Igor M. Villa (University of Milano-Bicocca) Lecture 3 – Thursday 18th January 2024, 3 PM – 5 PM CET (room U7-13 and Webex): (U-Th)/He thermochronology - Lecturer: Massimiliano Zattin (University of Padova) Lecture 4 – Friday 19<sup>h</sup> January 2024, 3 PM – 5 PM CET (room U7-17 and Webex): Fission-track thermochronology - Lecturer: Marco G. Malusà (University of Milano-Bicocca) Lecture 5 – Tuesday 23<sup>rd</sup> January 2024, 3 PM – 5 PM CET (room U6-24 and Webex): **Trapped-charge thermochronometry** - *Lecturer*: Georgina King (University of Lausanne) Lecture 6 – Wednesday 24th January 2024, 3 PM – 5 PM CET (room U6-38 and Webex): Sedimentology of detrital geo/thermochronology - Lecturer: Marco G. Malusà (University of Milano-Bicocca) Lecture 7 – Thursday 25th January 2024, 3 PM – 5 PM CET (room U7-07 and Webex): Detrital thermochronology within a stratigraphic framework - Lecturer: Marco G. Malusà (University of Milano-Bicocca) Lecture 8 – Friday 26th January 2024, 3 PM – 5 PM CET (room U7-16 and Webex): Application to orogenic belts: case studies - Lecturer: Marco G. Malusà (University of Milano-

Bicocca)