



**Thursday 26 May 2022**

Onsite: h.16 - Aula Ruffini *Dipartimento di Scienze della Terra, Torino*

Remote: [via webex at this LINK](#)

# Continental subduction in the Western Alps: facts and theories

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Once that continental subduction was largely accepted (by the end of the 1980's), it immediately opened a range of major questions, amongst which the most important are summarized below.

- Is continental subduction always succeeding oceanic subduction, the buoyant continental crust being dragged down by the subducting slab of oceanic lithosphere?
- Which parts of the continental crust are subducted? Is it the entire palaeomargin, or just parts of it, for example extensional allochthons? What is the role of the inherited structures associated with the rifting history of the palaeomargin?
- What is the age of the HP/UHP metamorphism? Is it the same along as well as across the belt, or is this metamorphism diachronous? In the latter case, does this reflect the progressive burial of a single continental plate, or are there several continental domains separated by oceanic domains?
- What are the mechanisms for the exhumation of the HP-UHP rocks? Is erosion the driving force for exhumation? What is the record of erosion in the nearby sedimentary basins?



This talk will answer to some of these questions in the specific case of the European Alpine belt. We will first characterize the type of crustal material that was involved in the subduction process, in order to understand its previous history and its location before the subduction (tilted blocks along the distal part of a palaeomargin, extensional allochthons?). We will then review the basic knowledge about the HP-UHP rocks in terms of P-T paths and timing. Finally, a discussion of the present geometry of the subducted continental units will lead to some considerations about the kinematic evolution of the mountain belt.

## The Speaker

Paola Manzotti is an assistant professor at Stockholm University (Sweden). After completing her PhD at the University of Bern (Switzerland) in 2012, she worked at the University of Rennes (France) for three years, then she was awarded a Swiss NSF Ambizione Fellowship at the University of Lausanne (Switzerland). Her research focuses on the mechanisms of mountain building and, especially, on the rock record of burial and exhumation cycles. She combines fieldwork, metamorphic petrology, and geochronology in order to decipher the complex evolution of subducted continental crust.

