

# *Subduction and Mountain building: a Mediterranean view*

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The Alpine-Mediterranean orogenic belts that mark the boundary between African and Eurasian plates turn sharply forming narrow arcs that surround extensional basins, in a rather unique tectonic setting. These Tertiary orogenic belts are characterized by an axial zone constituted by HP-LT units exhumed at an early stage of the deformation history, later locally overprinted by HT metamorphism, and an external fold and thrust belt with flysch troughs filled up by thick clastic sequences. To explain this particular tectonic setting, contrasting models have been proposed that generally separate a collisional phase from an accretionary one and where mountain building is attributed to multiple, different subduction phase. However, the history and evolution of these mountain belts, as attested for the Hellenides and Apennines-Calabria, show that cycles of burial, underplating and exhumation of continental blocks are in fact related to a single and continuous subduction event. In addition, exhumation processes in orogenic belt cores occurred during backarc extension related to slab rollback. Here, we show that in the evolution of the northern Apennines, Calabria, Betics and Hellenides mountain building results from accretion of crustal block scraped off from a retreating subduction system. The kinematic of this process has implication on the architecture of the orogens and, more generally, on the dynamic of “collision” and mountain building.