



Garnet micaschist which survived high-pressure metamorphism (Dora Maira Massif, Alps). Photo: Francesco Nosenzo

Survival of an old basement in the Alpine belt

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<https://stockholmuniversitet.zoom.us/j/63681525096>

Older continental crust may be recycled in the subduction zones and subjected to high-pressure metamorphism. Intense metamorphism and deformation in the subduction zones leave few traces of the older geological history, effectively rejuvenating the crust. However, the pre-subduction history of the basement critically determines its properties and hence its behavior during subduction. For example, initial crustal position (lower or upper crust), density and water content are essential for modelling subduction dynamics and metamorphism, both at the macro and microscale.

The Dora-Maira Massif (Western Alps, Italy) is an excellent example of an old continental crust involved in a subduction zone. There, a Palaeozoic basement reached high to ultrahigh-pressure conditions during the Eocene. We will present an exceptional outcrop in the Dora Maira Massif where the old basement survived the intense Alpine metamorphism, providing an exceptional window into the pre-subduction history.

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