



Exhumation along transpressive dextral strike slip fault in the Argentera massif (south-western Alps) constrained by structural, metamorphism and low-temperature thermochronology.

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Bring together contributions from structural, metamorphic and thermo-chronological analyses are pivotal to better understand orogenic processes as exhumation. The present study contributes to highlight the exhumation history of the Argentera massif (south-western Alps) based on original coupled structural, thermobarometry and Ar-Ar, AFT and AHe thermochronological data.

The structural observations, P-T conditions and the Ar-Ar absolute dating of Alpine deformation indicate a maximal burial between 15 and 20 km at [U+^F0BB] 375°C and a tectonically uplift of the massif since 33 Ma which could result from the transcurrent movements along the major NW-SE right lateral dextral ductile to brittle fault in response to a N-S shortening. Between 26 Ma to 20 Ma, this exhumation is polyphased and still in ductile regime.

Apatite fission track and (U-Th)/ He data suggest that the Argentera massif experienced an ongoing exhumation through the temperature closure isotherms between 3 and 12 Ma. The spatially distributions of the AFT and AHe ages can bring information about the pattern of deformation along the SW boundary of the Alpine belt. The oldest AFT age on the NE side could be interpreted as a migration of the front deformation from the internal part toward the external part of the belt. In addition, the similar AFT ages obtained on both basement and its sedimentary cover show that its exhumation history have been identical.