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Exhumation of Sardinia: apatite fission track results

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Sardinia, which was spared the Alpine metamorphism imprint and nappe stacking, records the precise timing of the geological history of the South European margin from the Eo-Variscan stage to present-day.

Apatite fission track results, performed on 26 samples distributed throughout the whole island, allow us to distinguish two main zones:

1. in southern Corsica and in eastern and western Sardinia, a zone comprising the Paleozoic basement and its Triassic-Jurassic cover where ages are older than 50 Ma. In the southern part of this former zone, ages range from 100 to 306 Ma.

2. along the Sardinian central graben and northwards into western Corsica, the majority of ages are younger than 30 Ma.

These results fully coincide with previous data on Corsica (*) and best constrain the timing of the formation of the South European margin from the opening and closure of the Liguro-Piedmont Ocean through to the opening of the Tyrrhenian Sea.

(*) Zarki-Jakni B., van der Beek P., Poupeau G., Sosson M., Labrin E., Rossi P., Ferrandini J. (2003). Cenozoic denudation of Corsica in response to Ligurian and Tyrrhenian extension: Results from apatite fission tracks thermochronology. Tectonics, 23, TC1003, 18 p.