



Preliminary results of fission-track dating of Variscan basement rocks in the Western Cantabrian Mountains

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The Cantabrian mountains in northern Spain form a linear coastal range with maximum elevations of 2700 m. They are considered to be an Alpine-age western prolongation of the Pyrenean Range that formed due to the compression that affected the northern part of the Iberian plate during the Cenozoic. The western termination of the Cantabrian mountains, from Asturias to Lugo, is underlain by deformed Variscan rocks that consists mostly of Early Paleozoic metasediments and granites. This area of the mountain range is considered to be an example of the early stages of mountain growth next to a margin that underwent incipient convergence. The current study looks at the cooling and denudation history of the area using apatite fission-track dating and modelling. In the present phase of the study, nine samples are considered, seven from undeformed post-Variscan granites and two are from Cambro-Ordovician metasediments. Preliminary results yielded apatite fission-track ages that range from Early Triassic to Paleocene. Two of the granitic samples yielded ages older than 240 Ma, five samples (three granites and two metasediments) yielded ages that range from 202 to 96 Ma, and two granitic samples yielded ages of 71 and 58 Ma. A preliminary interpretation of the results in the context of the known geodynamic evolution of the area is as follows; 1) the older ages possibly record early post-Variscan denudation that brought to the surface post-Variscan granitic rocks that were emplaced around 290 Ma, 2) the larger group of samples seem to register exhumation that can be related to geodynamic events that affected the area in the Mesozoic and that resulted in formation of the north Iberian Margin and the opening of the Bay of Biscay, 3) the two youngest ages may record exhumation that could be associated with the initiation

of Alpine compression. The oldest ages determined in this study are comparable to apatite fission-track ages obtained in other Variscan massifs across Europe.