

## Prologue

The Iberian Peninsula has held a particular interest for palaeomagnetists ever since the 1950's, when the first results were published of palaeomagnetic tests of rotation comparing Triassic rocks in England and Spain. Over the following half a century the tectonic evolution of the Iberian plate has remained a central issue in Iberian palaeomagnetism. This was brought to the fore in 1992 with the publication of "Física de la Tierra" n° 4, dedicated to palaeomagnetism and tectonics of the Betic Cordilleras.

As the number of studies has increased during this time, so has the number of Iberian palaeomagnetic laboratories. Along with this expansion there has been an increase in research capacity and a broadening of the scope of palaeomagnetic research. Tectonic and structural applications sit alongside magnetostratigraphic, archaeomagnetic, enviromagnetic, magnetic anisotropy and rock magnetic studies, produced by a lively and ambitious community that is of global relevance.

This edition of "Física de la Tierra" is intended to reflect this dynamism, showcasing some of the problems currently being addressed by Iberian palaeomagnetic groups.

Martin-Hernandez *et al* describe the anisotropy of magnetic susceptibility (AMS) of the Ronda peridotites. They show that magnetite, formed during serpentinization, together with paramagnetic phases as olivine, pyroxene and amphiboles, produces a magnetic lineation parallel to stretching lineation and may be used to evaluate structural directions where other markers are absent.

Gomez-Barreiro and Álvarez Lobato analyse numerical models of AMS acquisition based on mineral fabric determinations, evaluated with state of the art neutron diffraction instrumentation. They propose a valuable model of mineral fabric-AMS correlation and discuss origins and causes of deviations with respect to ideal cases.

Villasante Marcos *et al* study the Cretaceous-Tertiary boundary in marine sediments. Well-preserved ejecta horizons exhibit an easily recognizable magnetic fingerprint due to impact-generated Mg-Ni spinels, whilst rock magnetic properties across the whole of the marine record support other palaeoenvironmental proxies.

Palencia-Ortas *et al* detail Jurassic palaeosecular variation by comparing new data and global data sets. They highlight the potential of Jurassic volcanism in addressing both tectonic and geomagnetic issues.

Calvo-Rathert *et al* present an integrated study of rock magnetic properties, classical palaeomagnetism and mineral microscopy in order to study the secular variation of the geomagnetic field in a series of 11 lavas flows from La Gomera, Canary Islands. The results imply emplacement occurred over a short time interval, an important observation in terms of understanding internal volcanic processes.

Del Vigo and McIntosh apply a multispecimen palaeointensity technique to archaeological baked clays. They show that the results obtained are coherent with those

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obtained using the classical Thellier double heating method from the same material, and so has potential for archaeomagnetic applications.

Pavón-Carrasco y Villasante-Marcos deal with geomagnetic secular variation in the Canary Islands, constructing a secular variation curve for the last four centuries. They evaluate the reliability of using different regional and global geomagnetic models for palaeomagnetic dating and applying the method to two flows with previous geochronological control, highlighting methodological difficulties, limitations and potential improvements.

Together, these studies demonstrate the diversity, quality and scope of research topics being conducted by Iberian palaeomagnetists, and it is our pleasure to present them in this issue.

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