Geophysical Research Abstracts,
Vol. 11, EGU2009-7928, 2009
EGU General Assembly 2009

Iberia-Maghreb regional moment tensor solutions for 2005-2008

D. Stich and J. Morales

Instituto Andaluz de Geofísica, Universidad de Granada, Granada, Spain (daniel@iag.ugr.es)

We show moment tensor solutions for earthquakes in the Iberia-Maghreb region from May 2005 to November 2008, with moment magnitudes ranging from 3.3 to 6.0. Inversion is based upon intermediate-period waveforms recorded at regional seismic broadband stations. Following the recent densification of permanent broadband networks and important temporal deployments including TopoIberia, at present a total of ∼150 stations are recording in Spain, Portugal and Morocco. This unprecedented station density allows for addressing additional small events from available short-distance recordings and helps constraining source orientation more tightly in general. The solutions for 2005-2008 are an important upgrade of the Iberia-Maghreb moment tensor inventory, enhancing the image of seismotectonics at the compressive N-Algerian margin, in the left-lateral trans Alboran shear zone and at the transpressive SW-Iberian margin, as well as providing valuable samples of seismic deformation for the Moroccan interior, the western Betics and the Iberian foreland. Faulting in Morocco resembles the Alboran situation, suggesting the continuity of the trans Alboran shear faulting regime. New solutions for the western Betics and the foreland show strike-slip and reverse faulting style, contrasting with the dominance of normal faulting in the adjacent areas towards east and north, but the strain orientations appear highly heterogeneous and may be influenced by local conditions.