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Constraining Lithospheric evolution in Southwestern Iberia

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A reprocessing sequence of the IBERSEIS data was carried out in order to obtain a high quality crustal image, with special emphasis in the shallow features. IBERSEIS is a 303-km-long deep seismic profile in SW-Iberian Peninsula, that crosses the Variscan belt in the area. A previous seismic image reveals structures in the upper, middle, and lower crust being the most important feature the Iberseis Reflective Body (IRB), a 1.5-2 s high reflective zone in the middle crust. The high dense array of source and receivers (35 m station spacing and 70 m shot spacing) enable to obtain a high resolution image of the crust. The reprocessing steps include crooked-line geometry, refraction and automatic residual statics, detailed velocity analysis pre- and post-DMO, and post stack time migration. The applied static corrections were obtained separating the total shot and receiver refraction statics for each trace in a CDP gather into a mean and a residual CDP static. Automatic static corrections were applied after the velocity analysis. Additional constraints on the crustal velocity were obtained from the wide-angle dataset acquired coincident with IBERSEIS. The new resulting image shows structures that can be followed up to the surface and correlated with the mapped geology.