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Crustal structure beneath the Iberian Peninsula and surrounding waters: a new compilation of deep seismic sounding results.

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We present here an updated compilation of crustal parameters beneath the Iberian Peninsula and surrounding waters, inferred from extensive deep seismic exploration performed in the last three decades. Firstly, the more relevant experiments developed in both terrestrial and marine domains are revisited, together with the corresponding seismic velocity-depth models published that reveal the characteristics of the different tectonic domains sampled, including oceanic zones, continental margins, orogenic and rift belts. The results are summarized in three crustal transects sketched along representative directions. Secondly, we compiled the Moho depths along all the available seismic profiles to produce a geo-referred database. This database has then been interpolated using kriging algorithms to obtain a continuous Moho depth model, in the form of a regular grid file. This integrative Moho map for a key area in the Western Mediterranean documenting the interaction between European and African plates can contribute to constrain further regional studies, either at crustal, lithospheric or mantle scales.