



## **Ambient noise tomography of the Iberian Peninsula using the IberArray seismic network**

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We present new phase and group velocity maps of Rayleigh and Love waves for the Iberian peninsula using 3 years of data from the IberArray seismic network, and from other permanent networks in Spain and Portugal. Our results show a remarkable correlation with crustal structural features. In particular, they allow to image the extension and thickness of sedimentary basins with a level of detail that would be unattainable with earthquake data alone. Differences in crustal thickness are also well imaged throughout the region, allowing to identify thin oceanic crust beneath the Algerian basin, transitional or extended beneath the Alboran sea and Valencia trough, average continental crust in the Iberian Massif, and crustal roots associated with the Pyrenees, Iberian Range and the Betic orogen. The increased azimuthal coverage provided by the southern and central deployments of the IberArray transportable network also allows to obtain estimates of Rayleigh wave anisotropy in the Iberian Peninsula.

In addition, we investigate the effects on the empirical Green's functions obtained from cross-correlation of different pre-processing parameters and methods: duration of the data segments used for cross-correlation; amount of overlap between data segments; temporal normalization; spectral whitening; and data selection based on PSDs (power spectral densities) obtained by the quality control software PQLX.