IBERARRAY: Linking the the surface topography with the deep lithosphere in the Iberia Peninsula.

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The dynamics of Earth's interior profoundly impacts a wide range of surface processes, including the very existence of plate tectonics, intraplate volcanism, magnetic events from the short to the longterm, the state of stress in the lithosphere, and vertical motion from basin to continental scales manifested in uplift and subsidence with impact on drainage systems and geomorphology. Iberarray is a dense array of broad band seismic recorders deployed with the aim of studying the links between the deep litosferic processes and the crust in the Iberian peninsula. The plan is to deploy the stations in an, approximately 60x60 km grid to cover the entire country (Spain) in three deployments. In the first stage the array has been deployed in southern Iberia, 30 BB stations, and similarly 20 BB have been deloyed in northern Morroco. This network is dedicated to produce a relatively large dataset with an unprecedented resolution in this area of complex interaction between the European and African continental plates. It aims at looking deep into the Earth with the objective of modeling and unravelling the impact on the surface of the complex lithospheric processes that work in the area. The digital seismic network consists of the new Taurus recording unit and the Trilium 120s (both from Nanometrics). Earthquake data at local, regional and teleseismic scales will be analyed using different methodologies aiming at different objectives. A first phase

would be an increase in the precision on the location of the regional seismicity by considering waveform analysis and other advanced tecniques. A special emphasis will be attributed to the use of seismic tomographic inversion schemes to obtain 3 dimensional maps of physical properties (P and S seismic wave velocities) to study large scale structural elements within the Iberian Peninsula. This includes research using travel times and waveforms of P and S arrival at different scales (local, regional and global) and surface waves, using dispersion measurements and studies dealing with the background/enviromental noise. In addition receiver function analysis for seismic imaging of deep lithospheric features and splitting analysis of shear-wave arrivals will also be applied.