



A preliminary receiver function investigation of the South Iberian crust

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P-wave teleseismic records from the Instituto Andaluz de Geofísica (IAG) broad-band network have been processed to obtain receiver function estimates at 10 sites in Andalucía, Southern Spain. The network is an ongoing effort of the University of Granada to improve the monitoring of seismic activity in the region. The stations are equipped with STS-2 sensors feeding 24bits Earth Data digitizers, and GPS time-keeping units. The preliminary analysis presented in this paper includes a receiver function stack along the crustal phase-moveout curves at each station, and a number of waveform modellings. The waveform stack provides a first glimpse at the crustal properties beneath the stations (thickness and bulk V_p/V_s ratio), while the waveform modelling images detailed S-wave velocity structure. For stations in the Hercinian domain (NW Andalucía), the modelling is achieved through a linearized inversion scheme for S-wave velocity variation with depth, and suggests crustal thicknesses around 30 km, bulk V_p/V_s of 1.70-1.73 and a simple crustal structure ($V_s \sim 3.5$ km/s V_s and 12 km thick upper crust overlying a $V_s \sim 4$ km/s lower crust). For the waveforms recorded in the Betic domain (SE Andalucía) the degree of complexity is higher, suggesting a simple 1D model does not suffice. An initial, first-pass model with low angle-dipping structures partly explains the receiver function observations in this domain.