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# Constraining seismic velocity features combining short and long period signals: Test ground is Turkey

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Verifying the seismic velocity models requires combining different techniques to obtain more reliable basement for further steps, e.g., earthquake location, moment tensor analysis etc. Especially, 2D/3D heterogeneities and velocity contrasts are the key unknowns to be addressed in order to achieve the best-possible setup for further analysis. In that frame, short and long period signals are combined to better constrain the unusual velocity features. Our approach employs P-wave particle motions and receiver functions to discriminate the velocity structure of different crustal blocks. P-wave particle motions are basically used to differentiate direction of incoming waves, which is an indirect measure of potential velocity contrast/heterogeneity in horizontal axis. In the meanwhile, P-wave receiver functions are used to estimate frequency dependent S-wave velocities at different crustal spots. Turkey, seismically the most active region in Europe, is selected to be the test ground for joint analysis scheme. The region has been continuously monitored by AFAD (Prime Ministry, Ankara) and Kandilli Observatory (Boğaziçi Üniversity, Istanbul). Furthermore, some particular regions have been densely monitored for a couple of years by temporary seismic networks, e.g., the IRIS network deployed in the frame of the North Anatolian Fault experiment. We integrated all available data to reach to the highest possible coverage for selected test sites. The results are jointly interpreted to refine existing crustal models in Turkey.