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Investigation of P-Wave Backazimuth and Slowness Residuals at Small-Aperture Keskin Seismic Array (BRTR), Turkey

Azimuth and slowness errors are essential for estimating station corrections in order to improve the location quality. Keskin (BRTR) array is a primary seismic array of the IMS (International Monitoring System) network located at near Ankara in the Central Anatolia, Turkey. It consist of 7 array elements are in a circular array geometry with an approximate aperture of 3 km. Array processing techniques, especially the determination of slowness, are powerful in the characterization of seismic phases. We applied one of these techniques, standart f-k analysis, to estimate azimuth and slowness systematic errors for BRTR using Geotool software. In this study, observed backazimuth and slowness values from P phases of REB (Reviewed Event Bulletin) events in the last 3 years (2010-2012) were statistically analyzed. The back azimuth and slowness measurements are compared with theoretical predictions made using the iasp91 velocity model and residuals are obtained. Other IMS seismic arrays were also used for comparison purposes. Large and systematic azimuth deviations at BRTR array are identified in the study and will be presented.

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