Seismic Probe: P-wave Tripllication

**KEY POINTS**

- Short-period seismic array data are sensitivity to short-scale heterogeneities in the upper mantle.
- Mapped heterogeneities may be related to the complex tectonic history beneath North of Australia, since they are mapped in the general region of past or present subduction.
- Several uncertainties exist, such as confidence level of the reference phase, dependence of results on the reference model, and uncertainties in slowness and back azimuth calculation.
- The MIT08 model is shown in the background.

**ARRIVAL PROCESSING METHODS**

**SCATTERER LOCATIONS**

For each fault, we drew slowness (s), travel time (t), and back-azimuth (\(\alpha\)) relative to the first arrival, which is given PREM's slowness. This information evaluates a back-projection scheme for the scattering layer (see Fig. H, below). In particular, if \(s-a\), and \(t\), we confirm identification of the master, scatterers, and BAZ traces, choosing later arrivals with amplitude \(\geq 0.35\), and time \(|t| > 294.1\) [Fig. J]. The back-azimuth of the signals gotten from FK scheme and black line shows the back-azimuth of the great circle arc between earthquake and WRA. Theoretical times and back azimuths of all predicted upper mantle arrivals for PREM model are shown as stars.

**Master trace panel:** Maximum amplitude of the signal obtained from different slowness windows is marked time series (Rost et al., 2006).

**Stern losses trace panel:** Amplitude associated with the maximum amplitudes used in the master trace and are shown as stars. Black line shows the back-azimuth of the great circle arc between earthquake and WRA. Theoretical times and back azimuths of all predicted upper mantle arrivals for PREM model are shown as stars.

**Traces are aligned in time by earthquake origin time.**

**Earthquake distribution, color-coded for event depth, for all data. The starts show the arrivals separately.**

**Our next step will be a full waveform migration of these data.**

**REFERENCES**