After bandpass filtering signals, the covariance matrix is calculated and a series of cross-correlation coefficients are obtained. The matrix is then analyzed to obtain the orientation of the polarization ellipse for each station. For each station, we estimate the following parameters:

- **Azimuthal Angle (θ)**: The angle between the polarization direction and the horizontal plane, measured clockwise from the north.
- **Polarization Ratio (P)**: The ratio of the fast and slow polarizations.
- **Degree of Polarization (D)**: A measure of how well the polarization is aligned.

The spectral ratio is calculated through the product of the coherence function and the ratio of the spectral amplitudes of the two signals. This is repeated for all the spectral frequencies, resulting in a frequency dependence of polarization.

A weight factor WH is obtained from their product, which is applied to AZ, producing a weighted version of the rose diagram of polarization. To ensure that the population is large enough to be representative, the percentage of rejected time windows is also checked.

The results show a significant polarization effect at stations MMNB and GHIB close to the San Andreas fault damage zone, along a N85° direction. The polarization is orthogonal to the mean fast component of S waves velocity found by Boness & Zoback (2004) in the SAFOD pilot hole.

A marked polarization effect is observed at stations MMNB and GHIB, close to the San Andreas fault damage zone, along N85° direction. Polarization is orthogonal to the wave fast polarization of S waves velocity measured by Boness & Zoback (2004) in the SAFOD pilot hole.