PO01 - Orientation Method for onshore 3-C geophone VSP’s recorded with a Relative Bearing sensor in partially low deviated holes.
Example of 3C VSP orientation based on physical coherency of high amplitude S-wave waveform

Orientation process of adjacent VSP levels

The arrow points to an amplitude extremum within a time window defined over the S-wave direct arrival

**INNOVATIVE procedure:**
Prior to orientation, the time window selected over the direct arrival is picked with high precision on a combined signal invariant with respect to the axes orientation, such as, for example, the modulus signal $M(t)$:
$$M^2(t) = X^2(t) + Y^2(t)$$