

Locating the Nordstream explosions using polarization analysis

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Event 1

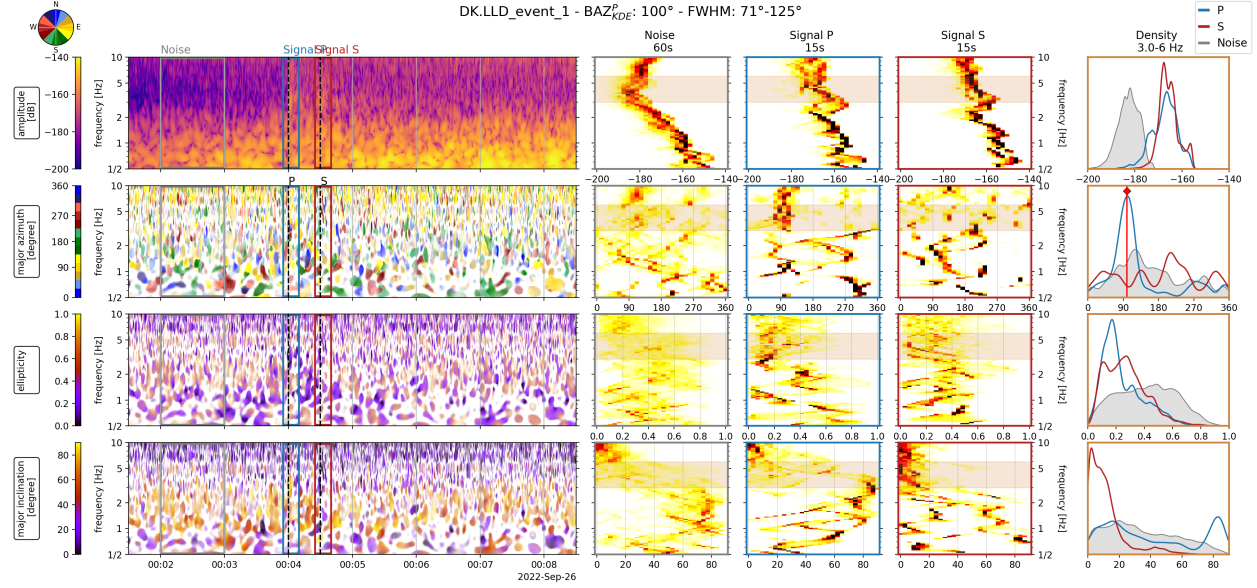


Figure 1: Polarisation analysis of station DK.LLD for event 1 (2022-09-26 00:03:24 UTC). The figure follows the same format as in the main text, but has an additional row for signal inclination (0° is horizontal, 90° is vertical). The estimated backazimuth is 100° , with an uncertainty range of 71° - 125° .

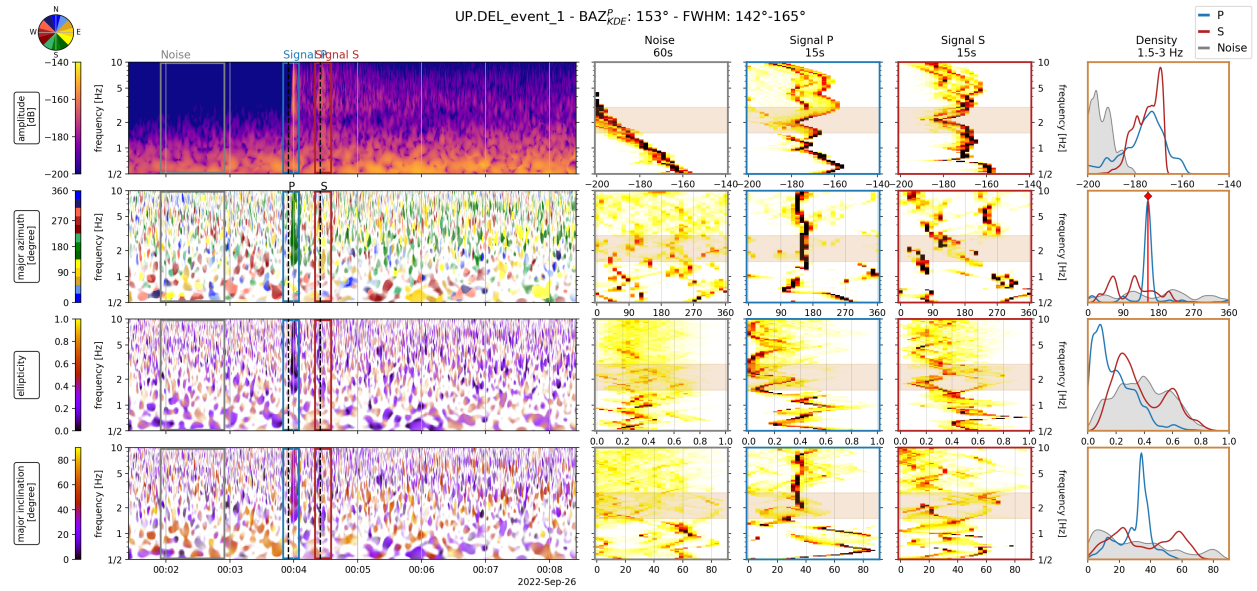


Figure 2: Polarisation analysis of station UP.DEL for event 1 (2022-09-26 00:03:24 UTC). The estimated backazimuth is 153° , with an uncertainty range of 142° - 165° .

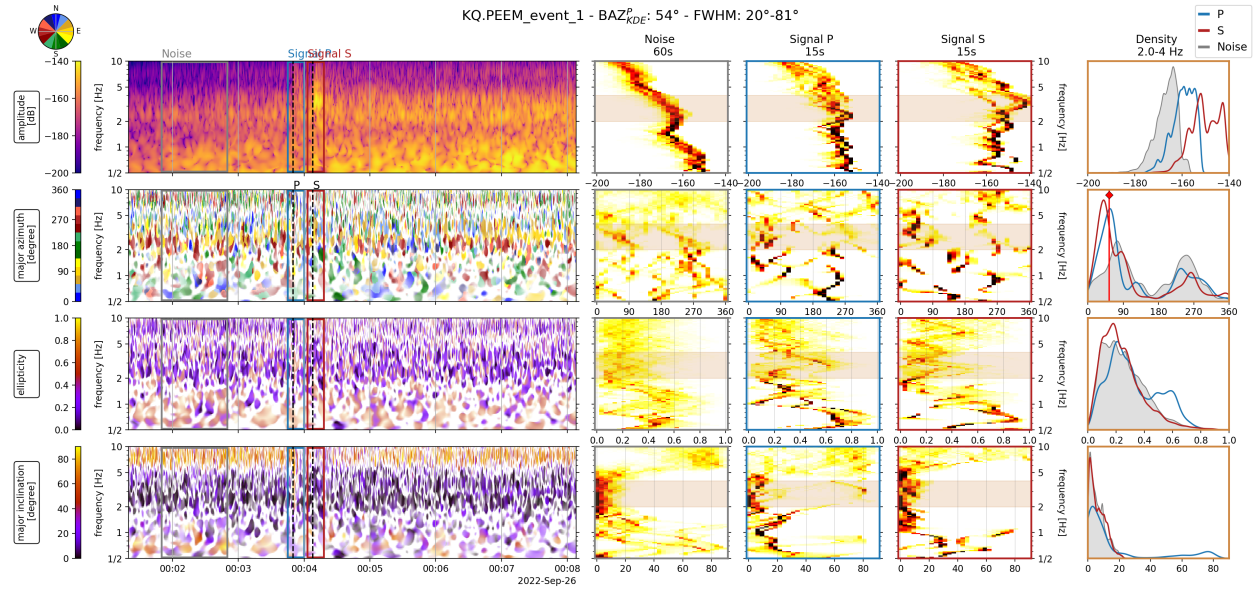


Figure 3: Polarisation analysis of station KQ.PEEM for event 1 (2022-09-26 00:03:24 UTC). The estimated backazimuth is 54° , with an uncertainty range of 20° – 81° .

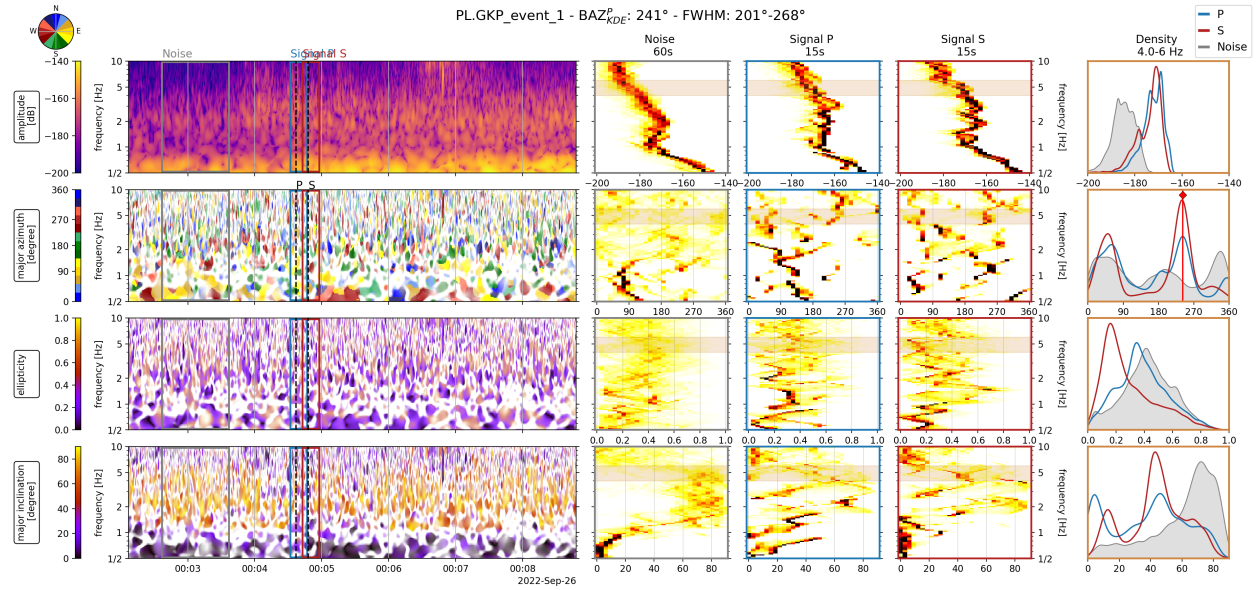


Figure 4: Polarisation analysis of station KQ.PEEM for event 1 (2022-09-26 00:03:24 UTC). This has been provided as a comparison plot, no clear polarized signal is visible. While the signal windows (P and S) have amplitudes above the noise, there is no consistent backazimuth signal associated with the event onset.

Event 2

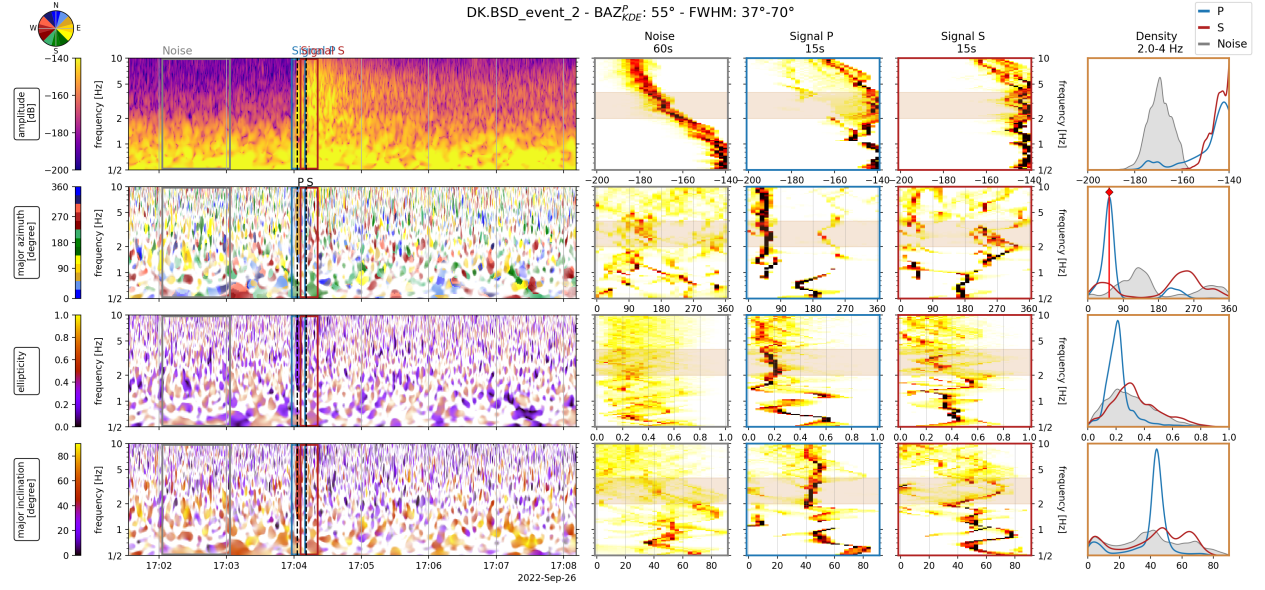


Figure 5: Polarisation analysis of station DK.BSD for event 2 (2022-09-26 17:03:50 UTC). The estimated back-azimuth is 55°, with an uncertainty range of 37°–70°.

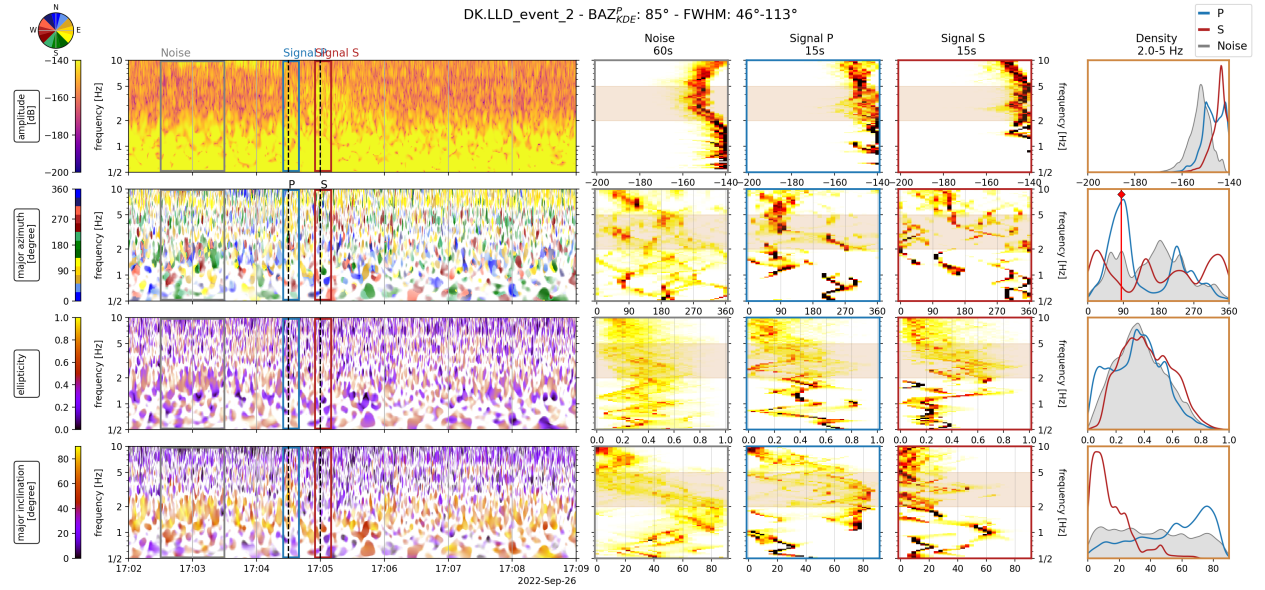


Figure 6: Polarisation analysis of station DK.LLD for event 2 (2022-09-26 17:03:50 UTC). The estimated back-azimuth is 85°, with an uncertainty range of 46°–113°.

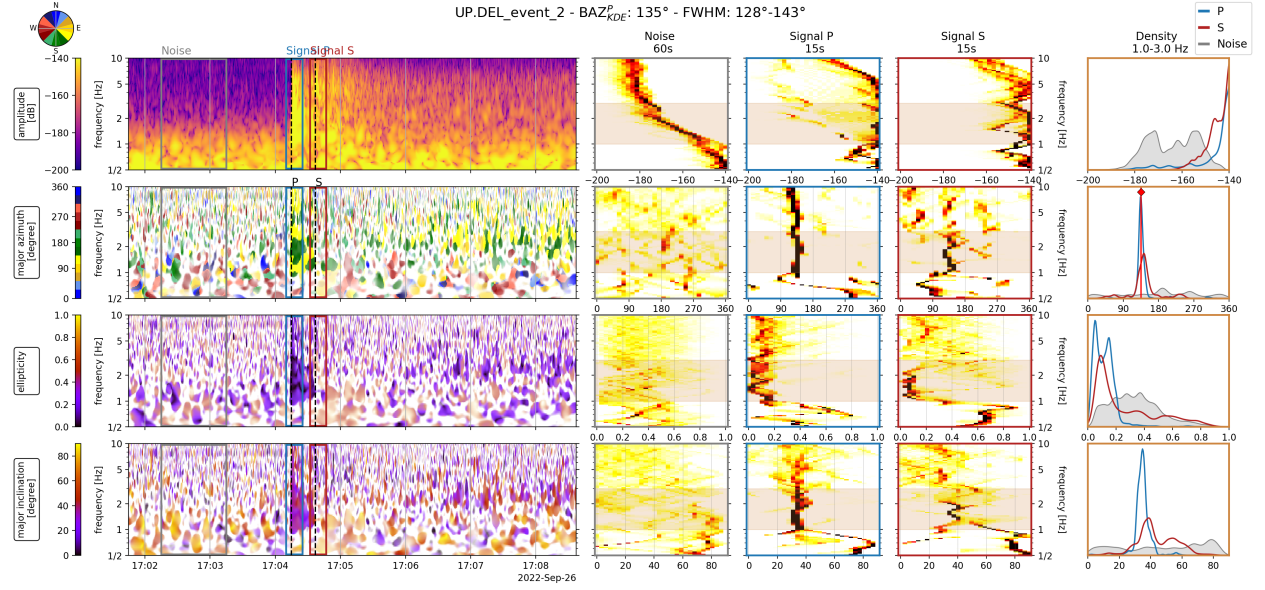


Figure 7: Polarisation analysis of station UP.DEL for event 2 (2022-09-26 17:03:50 UTC). The estimated backazimuth is 135° , with an uncertainty range of 128° – 143° .

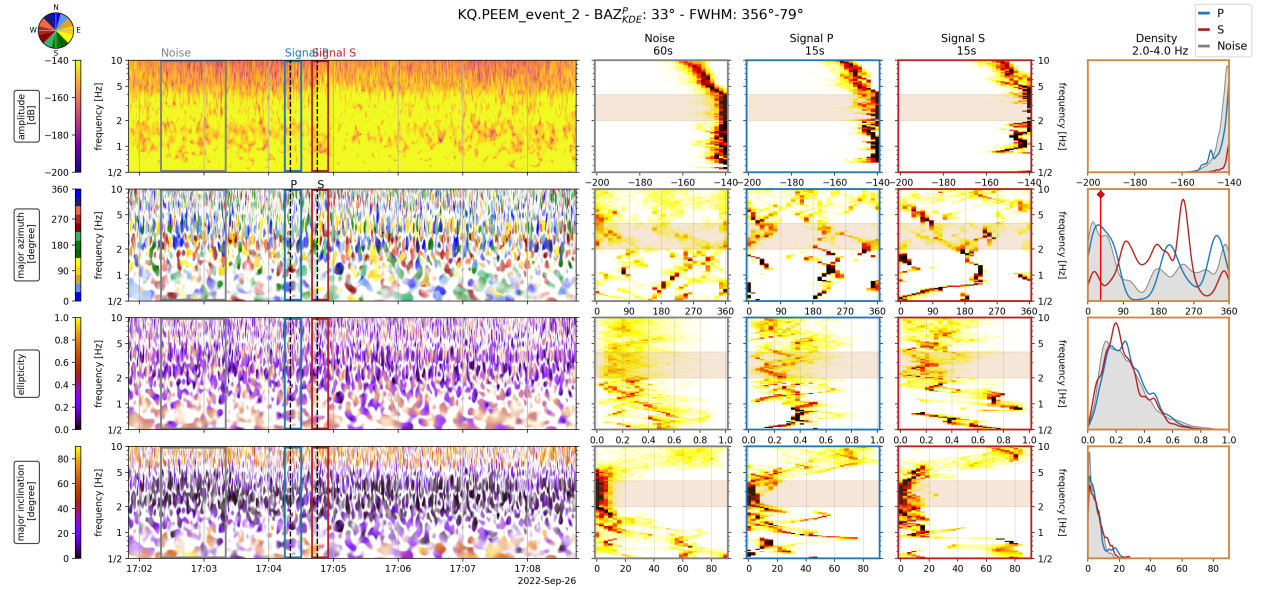


Figure 8: Polarisation analysis of station KQ.PEEM for event 2 (2022-09-26 17:03:50 UTC). The estimated backazimuth is 33° , with an uncertainty range of 356° – 79° .

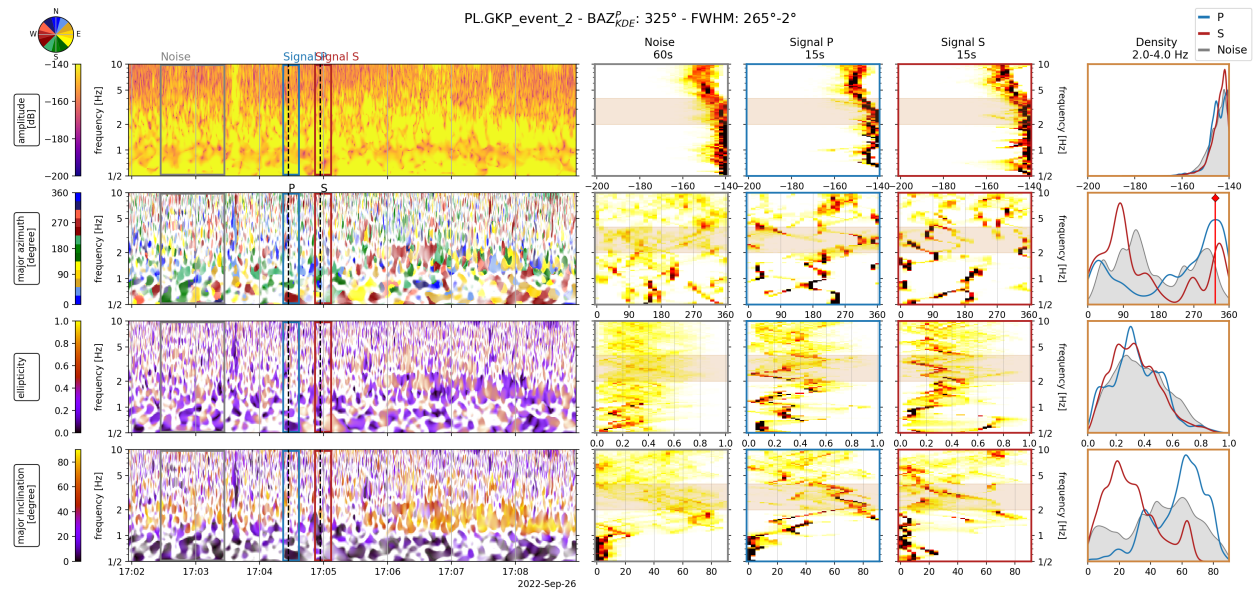


Figure 9: Polarisation analysis of station PL.GKP for event 2 (2022-09-26 17:03:50 UTC). The estimated back-azimuth is 325°, with an uncertainty range of 265°–2°.