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Supplement of

A functional tool to explore the reliability of micro-earthquake focal mechanism solutions for seismotectonic purposes

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FIGURES

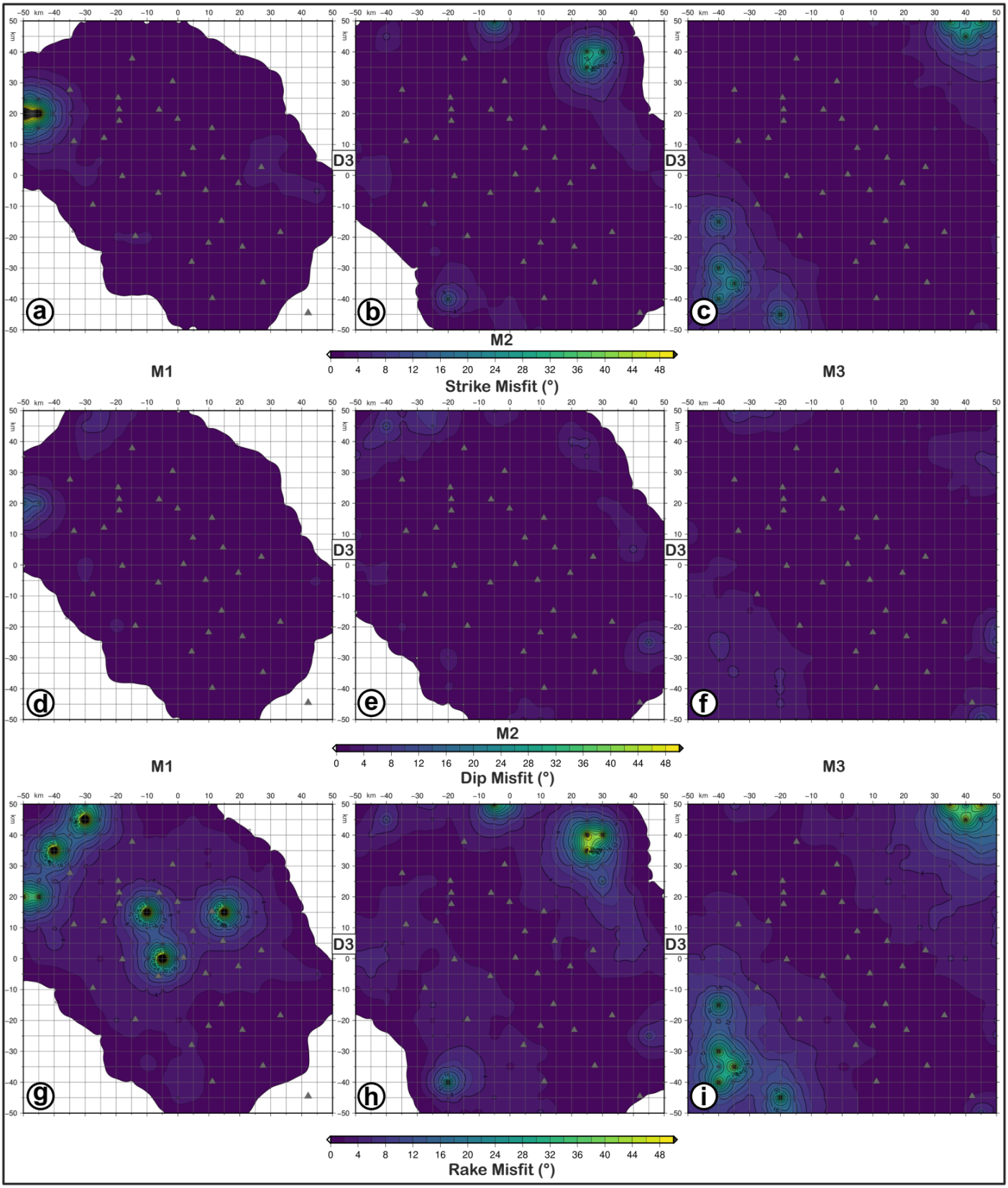

Figure S1. FMM (focal mechanism parameter misfit) maps for retrieved focal mechanisms with D3 datasets as input data and simulating earthquakes with M1 (a, d, g), M2 (b, e, h) and M3 (c, f, i) magnitudes and the FM2 theoretical fault plane solution at 10 km depth. a, b, c refer to strike misfit; d, e, f refer to dip misfit; g, h, i refer to rake misfit. The level of Gaussian noise is set to 5%.

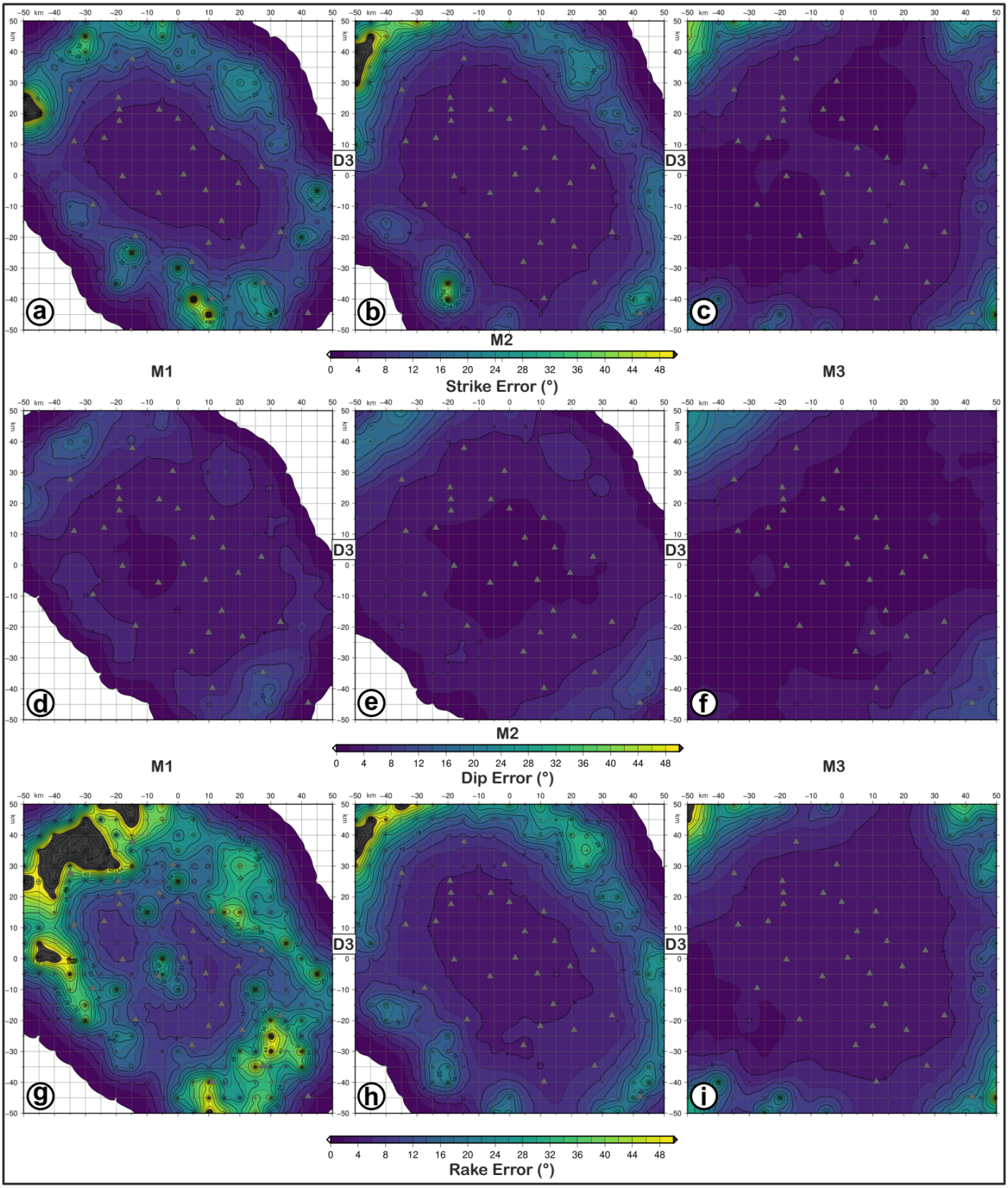

Figure S2. FME (strike, dip and dake error) maps for retrieved focal mechanisms with D3 datasets as input data and simulating earthquakes with M1 (a, d, g), M2 (b, e, h) and M3 (c, f, i) magnitudes and the FM2 theoretical fault plane solution at 10 km depth. a, b, c refer to strike error; d, e, f refer to dip error; g, h, i refer to rake error. The level of Gaussian noise is set to 5%.

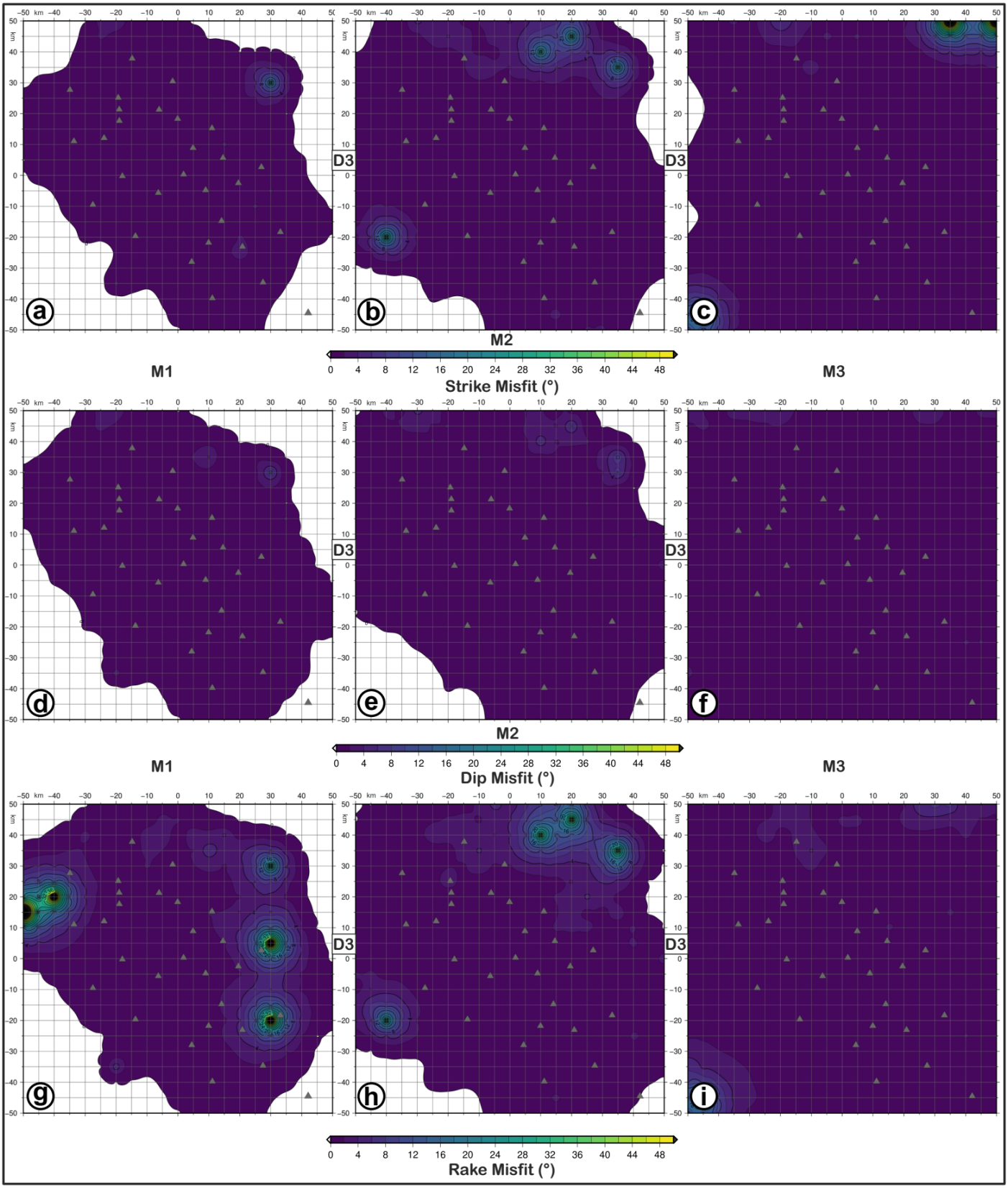

Figure S3. FMM (focal mechanism parameter misfit) maps for retrieved focal mechanisms with D3 datasets as input data and simulating earthquakes with M1 (a, d, g), M2 (b, e, h) and M3 (c, f, i) magnitudes and the FM3 theoretical fault plane solution at 10 km depth. a, b, c refer to strike misfit; d, e, f refer to dip misfit; g, h, i refer to rake misfit. The level of Gaussian noise is set to 5%.

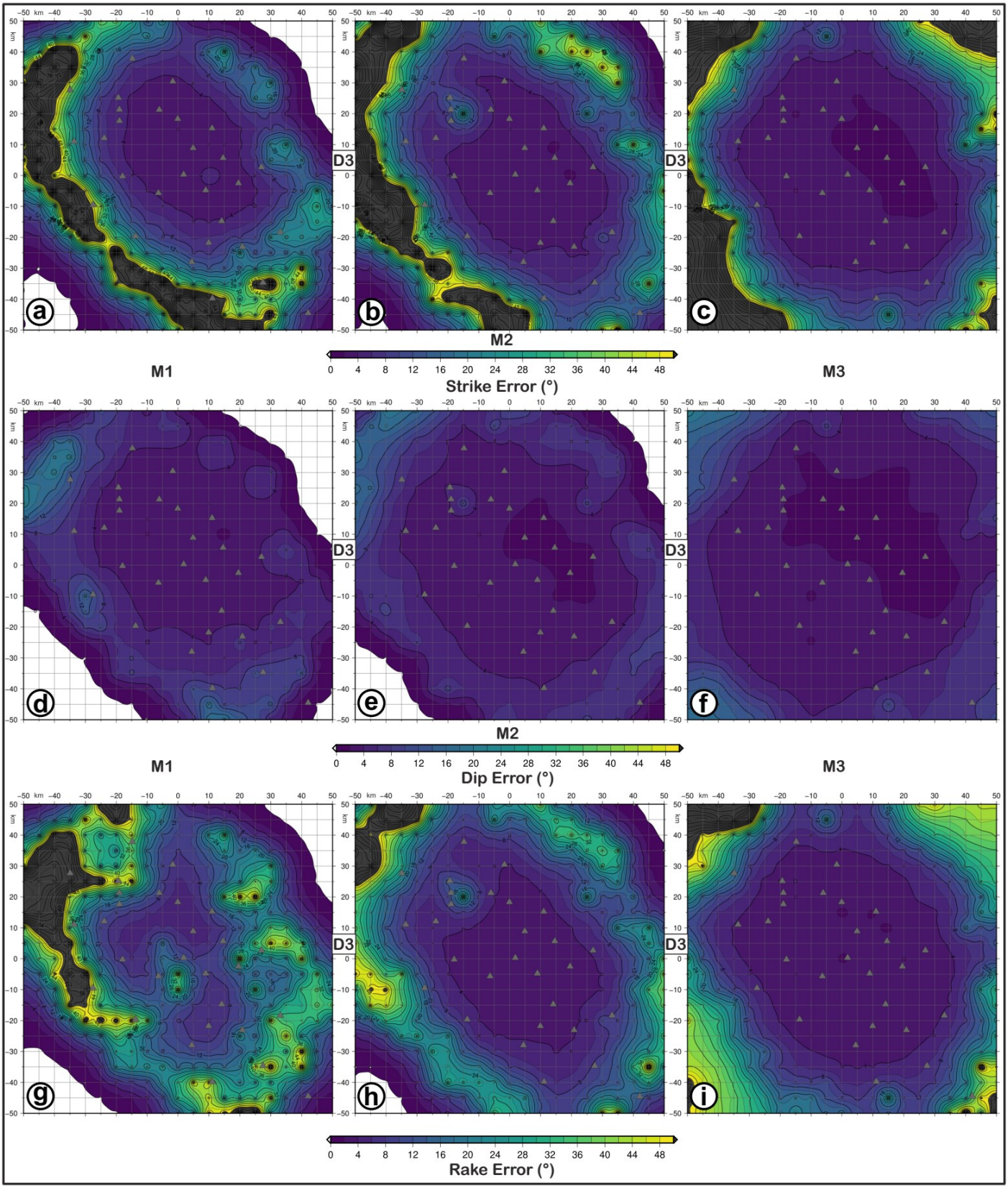

Figure S4. FME (strike, dip and dake error) maps for retrieved focal mechanisms with D3 datasets as input data and simulating earthquakes with M1 (a, d, g), M2 (b, e, h) and M3 (c, f, i) magnitudes and the FM3 theoretical fault plane solution at 10 km depth. a, b, c refer to strike error; d, e, f refer to dip error; g, h, i refer to rake error. The level of Gaussian noise is set to 5%.

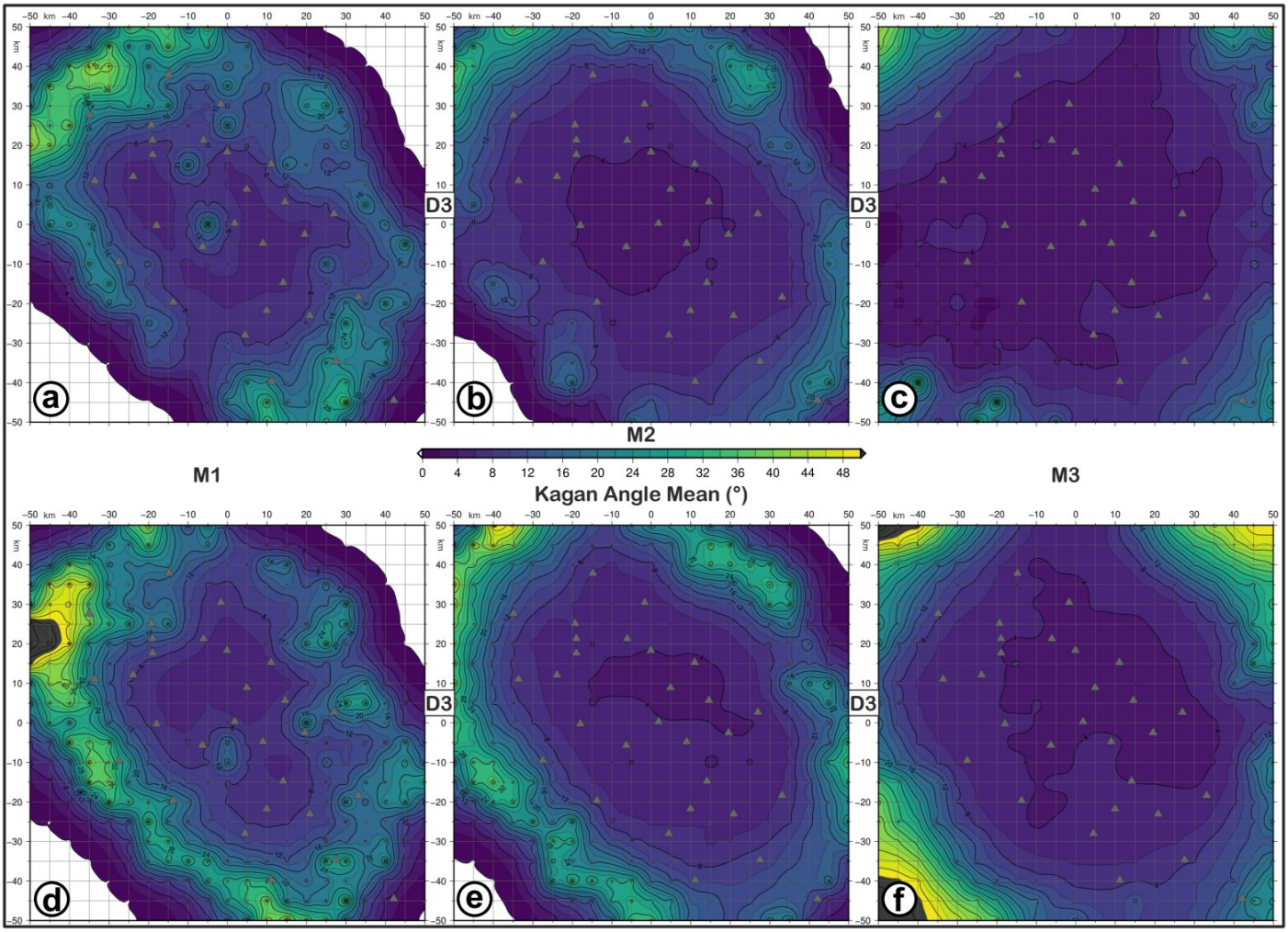

Figure S5 KAA (Kagan angle average) maps for retrieved focal mechanisms with D3 datasets as input data and simulating earthquakes with M1 (a, d), M2 (b, e) and M3 (c, f) magnitudes and FM2 (a, b, c) and the FM3 (d, e, f) theoretical fault plane solutions. The level of Gaussian noise is set to 5%.

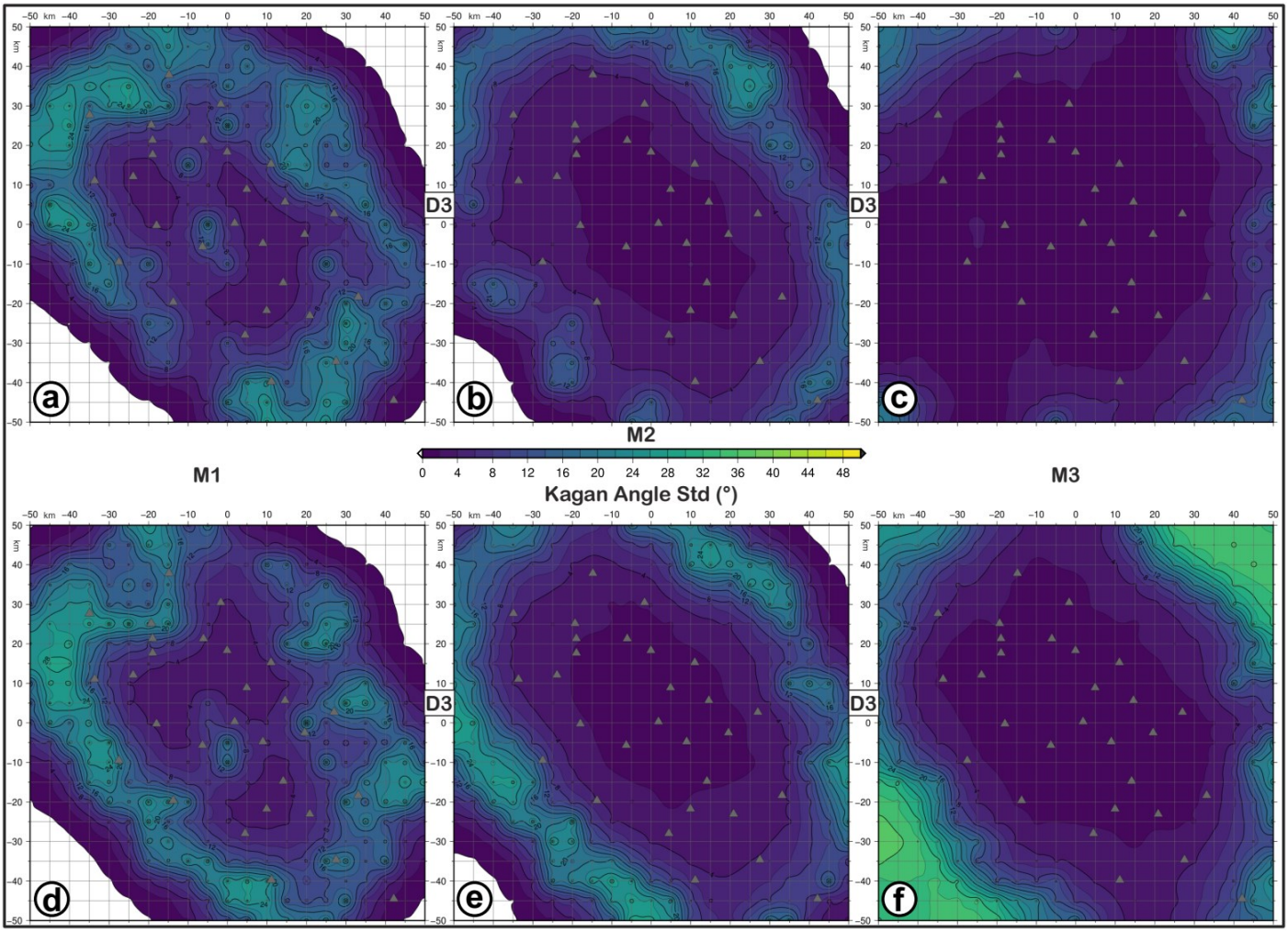

Figure S6. KAS (Kagan angle standard deviation) maps for retrieved focal mechanisms with D3 datasets as input data and simulating earthquakes with M1 (a, d), M2 (b, e) and M3 (c, f) magnitudes and FM2 (a, b, c) and FM3 (d, e, f) theoretical fault plane solutions. The level of Gaussian noise is set to 5%.

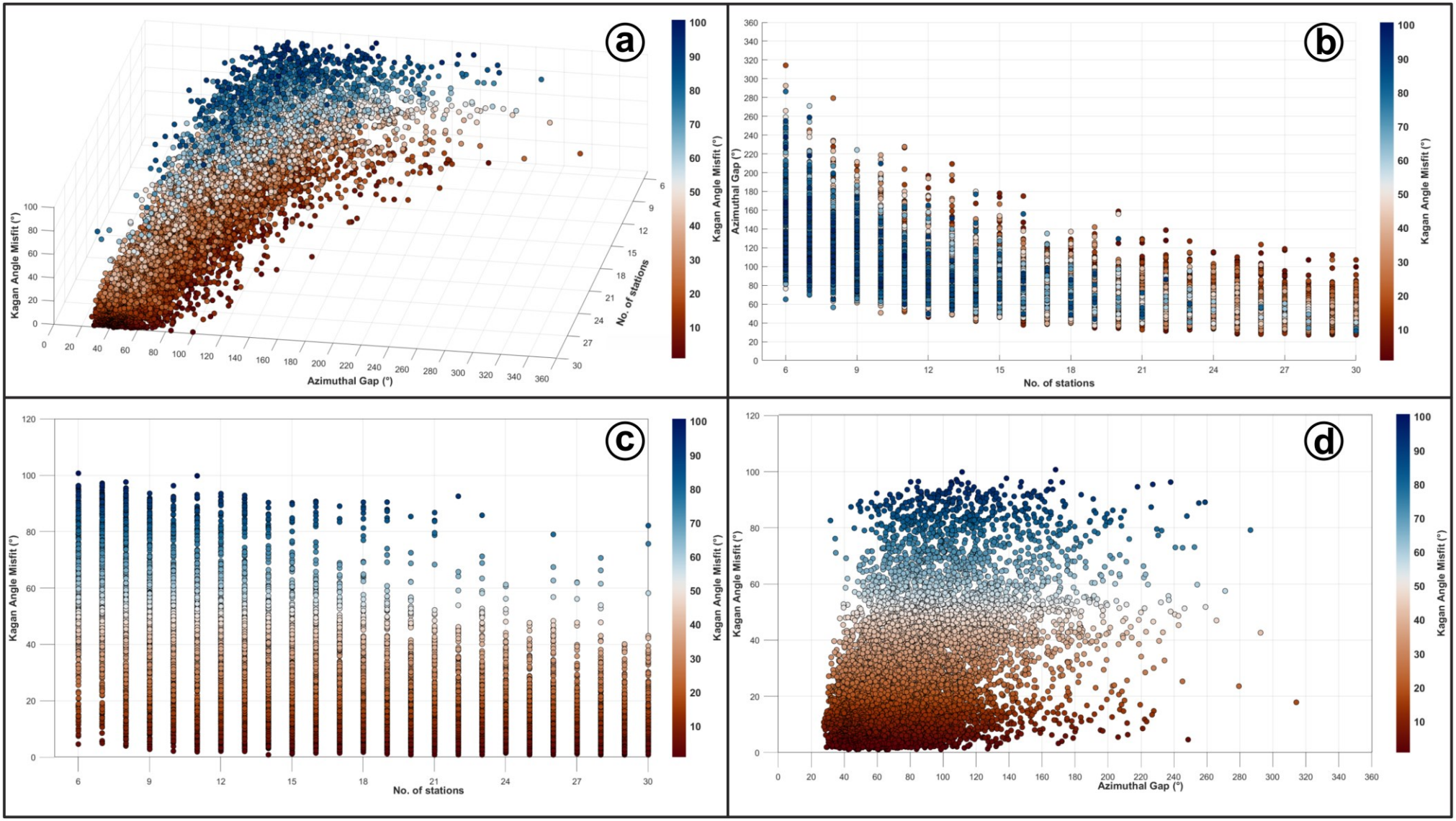
a
Kagan Angle Misfit (°)
Azimuthal Gap (°)
No. of stations
b
Azimuthal Gap (°)
No. of stations
Kagan Angle Misfit (°)
c
Kagan Angle Misfit (°)
No. of stations
d
Kagan Angle Misfit (°)
Azimuthal Gap (°)

Figure S7. 3D-scatter plot (a) of the test results in terms of number of stations (X-axis), azimuthal gap (Y-axis) and Kagan angle misfit (Z-axis). Projection of the simulation results on the XY (b), XZ (c) and YZ(d) coordinate planes in terms of number of stations and azimuthal gap. The simulations were carried out with a free network configuration.