Table S2: Fitted coupling coefficient for the *ImEz* signal

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Calculated signal | Regime | Frequency, kHz | Resistivity, ohm·m | Probe |
| “–0.25 m” | “0 m” | “+0.25 m” |
| Measured signal |
| *ReI* | *ImI* | *ReI* | *ImI* | *ReI* | *ImI* |
| *ImEz* | SUM | 250 | 1.04 | 216 | 135 | 182 | 155 | 201 | 135 |
| 2.5 | 265 | 77 | 267 | 85 | 270 | 79 |
| 3.57 | 275 | 52 | 271 | 60 | 282 | 55 |
| 5.41 | 295 | 31 | 299 | 37 | 302 | 35 |
| 8.13 | 312 | 17 | 315 | 22 | 324 | 20 |
| 11.9 | 337 | 5 | 336 | 9 | 348 | 8 |
| 100 | 1.04 | 1164 | 320 | 1129 | 355 | 1169 | 320 |
| 2.5 | 1391 | 150 | 1412 | 170 | 1412 | 153 |
| 3.57 | 1387 | 87 | 1377 | 100 | 1412 | 91 |
| 5.41 | 1440 | 45 | 1432 | 60 | 1468 | 57 |
| 8.13 | 1491 | 17 | 1507 | 27 | 1537 | 20 |
| 11.9 | 1581 | 1 | 1466 | 7 | 1630 | 1 |
| 50 | 1.04 | 3875 | 540 | 3612 | 600 | 3867 | 540 |
| 2.5 | 4300 | 250 | 4068 | 280 | 4372 | 250 |
| 3.57 | 4203 | 135 | 4192 | 180 | 4287 | 139 |
| 5.41 | 4307 | 70 | 4295 | 100 | 4375 | 85 |
| 8.13 | 4399 | 17 | 4436 | 27 | 4527 | 20 |
| 11.9 | 4623 | 5 | 4424 | 5 | 4737 | 5 |
| DIF | 250 | 1.04 | 236 | 100 | 210 | 145 | 236 | 110 |
| 2.5 | 295 | 58 | 272 | 80 | 303 | 62 |
| 3.57 | 295 | 36 | 282 | 55 | 308 | 43 |
| 5.41 | 308 | 24 | 304 | 40 | 320 | 28 |
| 8.13 | 314 | 17 | 313 | 25 | 333 | 17 |
| 11.9 | 311 | 9 | 312 | 17 | 341 | 9 |
| 100 | 1.04 | 1281 | 220 | 1191 | 290 | 1306 | 230 |
| 2.5 | 1494 | 110 | 1455 | 150 | 1533 | 115 |
| 3.57 | 1458 | 70 | 1450 | 105 | 1515 | 70 |
| 5.41 | 1511 | 50 | 1536 | 65 | 1552 | 42 |
| 8.13 | 1523 | 36 | 1584 | 40 | 1595 | 20 |
| 11.9 | 1525 | 30 | 1624 | 30 | 1627 | 10 |
| 50 | 1.04 | 4078 | 360 | 3955 | 450 | 4173 | 360 |
| 2.5 | 4535 | 190 | 4541 | 240 | 4670 | 190 |
| 3.57 | 4373 | 117 | 4452 | 145 | 4569 | 100 |
| 5.41 | 4507 | 110 | 4634 | 110 | 4619 | 50 |
| 8.13 | 4535 | 70 | 4771 | 70 | 4732 | 25 |
| 11.9 | 4491 | 80 | 4858 | 60 | 4793 | 10 |