Table S3: Fitted coupling coefficient for the *ReHφ* 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* |
| *ReHφ* | SUM | 250 | 1.04 | -0.14 | 0.095 | -0.12 | 0.097 | -0.14 | 0.095 |
| 2.5 | -0.33 | 0.098 | -0.30 | 0.098 | -0.35 | 0.098 |
| 3.57 | -0.47 | 0.083 | -0.42 | 0.087 | -0.48 | 0.085 |
| 5.41 | -0.72 | 0.071 | -0.67 | 0.077 | -0.77 | 0.080 |
| 8.13 | -1.16 | 0.056 | -1.07 | 0.067 | -1.27 | 0.060 |
| 11.9 | -1.88 | 0.023 | -1.82 | 0.040 | -2.08 | 0.037 |
| 100 | 1.04 | -0.85 | 0.220 | -0.74 | 0.22 | -0.85 | 0.22 |
| 2.5 | -2.05 | 0.220 | -1.85 | 0.22 | -2.11 | 0.22 |
| 3.57 | -2.85 | 0.167 | -2.59 | 0.18 | -2.96 | 0.18 |
| 5.41 | -4.46 | 0.132 | -4.12 | 0.16 | -4.71 | 0.16 |
| 8.13 | -7.19 | 0.077 | -6.85 | 0.11 | -7.78 | 0.09 |
| 11.9 | -11.67 | 0.033 | -11.49 | 0.05 | -12.77 | 0.02 |
| 50 | 1.04 | -3.32 | 0.435 | -2.94 | 0.45 | -3.34 | 0.44 |
| 2.5 | -8.11 | 0.450 | -7.34 | 0.45 | -8.37 | 0.46 |
| 3.57 | -11.27 | 0.333 | -10.26 | 0.38 | -11.72 | 0.35 |
| 5.41 | -17.60 | 0.278 | -16.26 | 0.36 | -18.54 | 0.32 |
| 8.13 | -28.71 | 0.100 | -26.86 | 0.17 | -30.44 | 0.12 |
| 11.9 | -50.11 | 0.067 | -46.47 | 0.07 | -49.32 | 0.01 |
| DIF | 250 | 1.04 | -0.23 | 0.091 | -0.14 | 0.10 | -0.23 | 0.091 |
| 2.5 | -0.53 | 0.108 | -0.35 | 0.11 | -0.57 | 0.108 |
| 3.57 | -0.73 | 0.083 | -0.49 | 0.11 | -0.79 | 0.110 |
| 5.41 | -1.11 | 0.083 | -0.75 | 0.11 | -1.18 | 0.100 |
| 8.13 | -1.70 | 0.083 | -1.12 | 0.10 | -1.86 | 0.083 |
| 11.9 | -2.52 | 0.063 | -1.59 | 0.10 | -2.80 | 0.063 |
| 100 | 1.04 | -1.31 | 0.22 | -0.89 | 0.25 | -1.36 | 0.22 |
| 2.5 | -3.33 | 0.26 | -2.23 | 0.26 | -3.52 | 0.26 |
| 3.57 | -4.49 | 0.20 | -3.08 | 0.26 | -4.87 | 0.20 |
| 5.41 | -6.99 | 0.21 | -4.78 | 0.25 | -7.59 | 0.21 |
| 8.13 | -10.75 | 0.22 | -7.24 | 0.25 | -11.62 | 0.12 |
| 11.9 | -16.44 | 0.313 | -10.75 | 0.22 | -18.14 | 0.10 |
| 50 | 1.04 | -5.13 | 0.44 | -3.54 | 0.48 | -5.36 | 0.44 |
| 2.5 | -13.16 | 0.50 | -8.94 | 0.50 | -13.99 | 0.50 |
| 3.57 | -17.78 | 0.45 | -12.32 | 0.45 | -19.39 | 0.40 |
| 5.41 | -27.79 | 0.56 | -18.98 | 0.50 | -29.49 | 0.27 |
| 8.13 | -42.85 | 0.67 | -28.98 | 0.50 | -46.18 | 0.20 |
| 11.9 | -65.28 | 1.00 | -43.08 | 0.63 | -75.69 | 0.10 |