Principal component analysis as a tool to extract $S_q$ variation from the geomagnetic field observations: conditions of applicability

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Supplementary Material, file SM4

Relations between $dtw$ and $r$ values

Table S4.1 and Figure S4.1

Table S4.1. Correspondence between the correlation coefficients and the $dtw$ parameters obtained for all sets of series studied in this work (PCs vs RS). $RS = S_{IQD\, allY}$, $S_{CMS}$ or $S_{DIFI3}$.

| $r$  | $dtw$ (mean ± SD)          |       |       |       |       |
|------|----------------------------|-------|-------|-------|-------|
|      | $S_{IQD\, allY}$           | $S_{CMS}$ | $S_{DIFI3}$ | Mean  |       |
| 0.3  | 0.66 ± 0.04                | 0.64 ± 0.03 | 0.69 ± 0.02 | 0.67 ± 0.03 |       |
| 0.5  | **0.52 ± 0.05**            | **0.51 ± 0.02** | **0.59 ± 0.01** | **0.55 ± 0.04** |       |
| 0.6  | 0.43 ± 0.05                | 0.44 ± 0.02 | 0.52 ± 0.02 | 0.47 ± 0.05 |       |
| 0.75 | 0.29 ± 0.04                | 0.3 ± 0.02  | 0.39 ± 0.03 | 0.34 ± 0.05 |       |
| 0.9  | 0.13 ± 0.02                | **0.14 ± 0.01** | **0.19 ± 0.03** | **0.16 ± 0.03** |       |
Figure S4.1. Comparison of the correlation coefficients $r$ and $dtw$ values obtained for pairs of the SqIQD and SqIQD allY series (black dots). The fit $dtw = A(1-r)/(B+(1-r))$ is shown by red dots.