

Errata: A spatial cross-correlation model for ground motion spectral accelerations at multiple periods

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An error in the numerical implementation of the Goulard-Voltz algorithm by Loth and Baker (2013) led to incorrect numerical results being produced in Tables II through IV of the original manuscript. The correct tables are provided below.

Table II. Short range coregionalization matrix, \mathbf{B}^1 .

| Period (s) | 0.01 | 0.10 | 0.20 | 0.5 | 1 | 2 | 5 | 7.5 | 10 |
|------------|------|------|------|------|------|------|------|------|------|
| 0.01 | 0.29 | 0.25 | 0.23 | 0.23 | 0.18 | 0.10 | 0.06 | 0.06 | 0.06 |
| 0.1 | 0.25 | 0.30 | 0.20 | 0.16 | 0.10 | 0.04 | 0.03 | 0.04 | 0.05 |
| 0.2 | 0.23 | 0.20 | 0.27 | 0.18 | 0.10 | 0.03 | 0.00 | 0.01 | 0.02 |
| 0.5 | 0.23 | 0.16 | 0.18 | 0.31 | 0.22 | 0.14 | 0.08 | 0.07 | 0.07 |
| 1 | 0.18 | 0.10 | 0.10 | 0.22 | 0.33 | 0.24 | 0.16 | 0.13 | 0.12 |
| 2 | 0.10 | 0.04 | 0.03 | 0.14 | 0.24 | 0.33 | 0.26 | 0.21 | 0.19 |
| 5 | 0.06 | 0.03 | 0.00 | 0.08 | 0.16 | 0.26 | 0.37 | 0.30 | 0.26 |
| 7.5 | 0.06 | 0.04 | 0.01 | 0.07 | 0.13 | 0.21 | 0.30 | 0.28 | 0.24 |
| 10 | 0.06 | 0.05 | 0.02 | 0.07 | 0.12 | 0.19 | 0.26 | 0.24 | 0.23 |

Table III. Long range coregionalization matrix, \mathbf{B}^2 .

| Period (s) | 0.01 | 0.10 | 0.20 | 0.5 | 1 | 2 | 5 | 7.5 | 10 |
|------------|------|------|------|------|------|------|------|------|------|
| 0.01 | 0.47 | 0.40 | 0.43 | 0.35 | 0.27 | 0.15 | 0.13 | 0.09 | 0.12 |
| 0.1 | 0.40 | 0.42 | 0.37 | 0.25 | 0.15 | 0.03 | 0.04 | 0.00 | 0.03 |
| 0.2 | 0.43 | 0.37 | 0.45 | 0.36 | 0.26 | 0.15 | 0.09 | 0.05 | 0.08 |
| 0.5 | 0.35 | 0.25 | 0.36 | 0.42 | 0.37 | 0.29 | 0.20 | 0.16 | 0.16 |
| 1 | 0.27 | 0.15 | 0.26 | 0.37 | 0.48 | 0.41 | 0.26 | 0.21 | 0.21 |
| 2 | 0.15 | 0.03 | 0.15 | 0.29 | 0.41 | 0.55 | 0.37 | 0.33 | 0.32 |
| 5 | 0.13 | 0.04 | 0.09 | 0.20 | 0.26 | 0.37 | 0.51 | 0.49 | 0.49 |
| 7.5 | 0.09 | 0.00 | 0.05 | 0.16 | 0.21 | 0.33 | 0.49 | 0.62 | 0.60 |
| 10 | 0.12 | 0.03 | 0.08 | 0.16 | 0.21 | 0.32 | 0.49 | 0.60 | 0.68 |

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Table IV. Nugget effect coregionalization matrix, \mathbf{B}^3 .

| Period (s) | 0.01 | 0.1 | 0.2 | 0.5 | 1 | 2 | 5 | 7.5 | 10 |
|------------|-------|-------|-------|------|-------|------|------|------|-------|
| 0.01 | 0.24 | 0.22 | 0.21 | 0.09 | -0.02 | 0.01 | 0.03 | 0.02 | 0.01 |
| 0.1 | 0.22 | 0.28 | 0.20 | 0.04 | -0.05 | 0.00 | 0.01 | 0.01 | -0.01 |
| 0.2 | 0.21 | 0.20 | 0.28 | 0.05 | -0.06 | 0.00 | 0.04 | 0.03 | 0.01 |
| 0.5 | 0.09 | 0.04 | 0.05 | 0.26 | 0.14 | 0.05 | 0.05 | 0.05 | 0.04 |
| 1 | -0.02 | -0.05 | -0.06 | 0.14 | 0.20 | 0.07 | 0.05 | 0.05 | 0.05 |
| 2 | 0.01 | 0.00 | 0.00 | 0.05 | 0.07 | 0.12 | 0.08 | 0.07 | 0.06 |
| 5 | 0.03 | 0.01 | 0.04 | 0.05 | 0.05 | 0.08 | 0.12 | 0.10 | 0.08 |
| 7.5 | 0.02 | 0.01 | 0.03 | 0.05 | 0.05 | 0.07 | 0.10 | 0.10 | 0.09 |
| 10 | 0.01 | -0.01 | 0.01 | 0.04 | 0.05 | 0.06 | 0.08 | 0.09 | 0.09 |

REFERENCES

- Loth, C., and J. W. Baker (2013). A spatial cross-correlation model for ground motion spectral accelerations at multiple periods, *Earthquake Engineering & Structural Dynamics* **42**(3), 397–417, doi:DOI:10.1002/eqe.2212.