ESM Table 2. Correlation analysis of SPI metrics and sediment parameters

Correlations were evaluated with the Holm’s sequential Bonferroni method (Holm, 1979). Yellow *p*<0.05; green *p*<0.001

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | CMECS Div |  OSI | BHQ  | BHQ fauna | aRPD | DIC | Fe2+ | pwMn | NH4 | FeII(hr) | Fe(np) | FeIII(hr) | Mn(s) | ON | OC | Porosity | Bottom Water DO | Temp | Water Depth |
| DB(mixing) | 0.9560 | 0.8690 | 0.6030 | 0.7660 | 0.7160 | 0.9560 | 0.5270 | 0.8000 | 0.8000 | 0.2840 | 0.4150 | 0.4420 | 0.3770 | 0.4290 | 0.5720 | 0.9390 | 0.4020 | 0.4020 | 0.4150 |
| CMECS Div |   | 0.1300 | 0.0663 | 0.0584 | 0.7490 | 0.1730 | 0.8520 | 0.2330 | 0.1570 | 0.0478 | 0.1730 | 0.4020 | 0.1360 | 0.0387 | 0.0139 | 0.0944 | 0.5270 | 0.5130 | 0.8170 |
|  OSI |   |   | **0.0000** | 0.0047 | 0.0169 | 0.0154 | 0.6510 | 0.0944 | 0.0139 | 0.3890 | 0.1730 | 0.1650 | 0.2060 | 0.5130 | 0.8000 | 0.2240 | 0.7160 | 0.0749 | 0.0054 |
| BHQ  |   |   |   | **0.0000** | 0.0126 | **0.0000** | 0.8340 | 0.2840 | **0.0000** | 0.4020 | 0.4980 | 0.4150 | 0.5270 | 0.9560 | 0.6350 | 0.5130 | 0.5270 | 0.0512 | 0.0034 |
| BHQ fauna |   |   |   |   | 0.0547 | **0.0001** | 0.7490 | 0.7660 | **0.0000** | 0.2840 | 0.8690 | 0.6830 | 0.9210 | 0.4560 | 0.2630 | 0.9740 | 0.5130 | 0.2150 | 0.0203 |
| aRPD |   |   |   |   |   | 0.0285 | 0.6190 | 0.0014 | 0.0263 | 0.8340 | 0.0242 | 0.0359 | 0.0308 | 0.0843 | 0.1430 | 0.0023 | 0.0705 | 0.0154 | **0.0000** |
| DIC |   |   |   |   |   |   | 0.2730 | 0.5880 | **0.0000** | 0.2240 | 0.4980 | 0.4840 | 0.5130 | 0.6510 | 0.4150 | 0.6670 | 0.4150 | 0.0705 | 0.0139 |
| Fe2+ |   |   |   |   |   |   |   | 0.8860 | 0.2950 | 0.2430 | 0.6030 | 0.9560 | 0.6510 | 0.4290 | 0.7160 | 0.4840 | 0.6030 | 0.5420 | 0.9040 |
| pwMn |   |   |   |   |   |   |   |   | 0.6350 | 0.4700 | **0.0000** | 0.0014 | **0.0000** | 0.0090 | 0.0071 | 0.0000 | 0.2630 | 0.0795 | 0.0154 |
| NH4 |   |   |   |   |   |   |   |   |   | 0.1430 | 0.6830 | 0.6830 | 0.7160 | 0.5720 | 0.3060 | 0.8000 | 0.4150 | 0.0663 | 0.0126 |
| FeIIs |   |   |   |   |   |   |   |   |   |   | 0.5720 | 0.6990 | 0.4420 | 0.1110 | 0.0584 | 0.3890 | 0.9560 | 0.4840 | 0.5720 |
| Fe(np) |   |   |   |   |   |   |   |   |   |   |   | **0.0000** | **0.0000** | 0.0222 | 0.0285 | **0.0000** | 0.8860 | 0.1430 | 0.0749 |
| FeIII(hr) |   |   |   |   |   |   |   |   |   |   |   |   | **0.0000** | 0.0843 | 0.0892 | 0.0047 | 0.9560 | 0.0705 | 0.0623 |
| Mn(s) |   |   |   |   |   |   |   |   |   |   |   |   |   | 0.0263 | 0.0263 | **0.0000** | 0.8690 | 0.1730 | 0.0892 |
| ON |   |   |   |   |   |   |   |   |   |   |   |   |   |   | **0.0000** | **0.0000** | 0.6510 | 0.3890 | 0.2730 |
| OC |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | **0.0000** | 0.4420 | 0.5270 | 0.3400 |
| Porosity |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0.3060 | 0.0843 | 0.0285 |
| Bottom water DO |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0.6990 | 0.0478 |
| Temp |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0.0047 |