**Table S4.** **Kinetic Isotope Effect (KIE) for soil methanotrophy on early, mid and late succession islands.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Successional Stage** | **0-15 cm** | **n** | **0-35 cm** | **n** | **0-55 cm** | **n** | **0-75 cm** | **n** |
| **Early** | 1.0208(0.0004) | 10 | 1.0215(0.0004) | 7 | nd  | nd | nd | 0 |
| **Mid** | 1.0206(0.0005) | 10 | 1.0223(0.0006) | 9 | 1.0211(0.0008) | 6 | nd | 0 |
| **Late** | 1.0211(0.0005) | 10 | 1.0223(0.0010) | 10 | 1.0237(0.0006) | 9 | 1.0219(0.0011) | 4 |

Values in brackets are standard errors of the mean. ‘nd’ indicates where samples could not be obtained due to a shallow humus depth. The number of depths sampled is given by n.