

Supplementary material

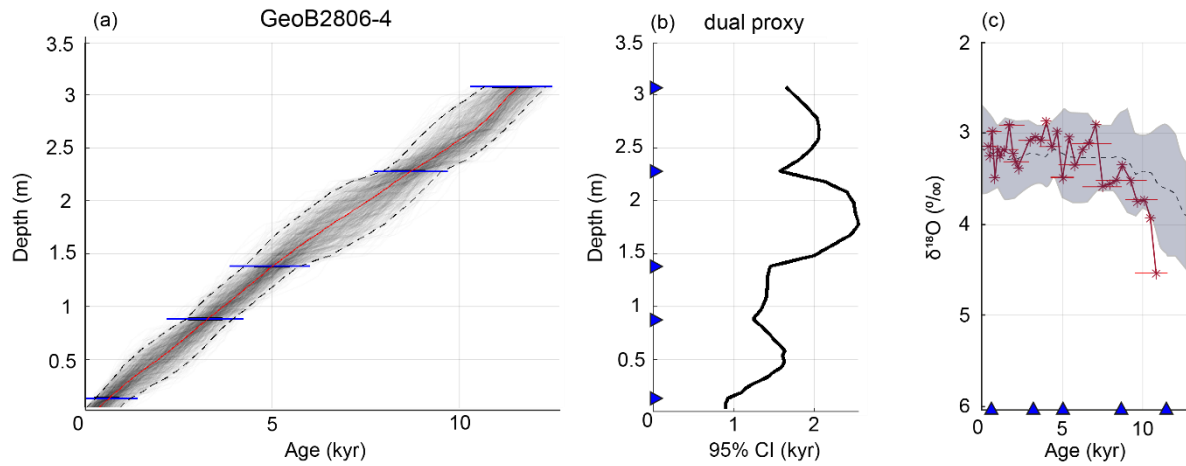


Figure S1: Results of Bayesian Inference Gaussian Process regression and Multiproxy Alignment for Continuous Stacks (BIGMACS) (Lee et al., 2023). (a) Age-depth model derived from probabilistic alignment. (b) Chronological uncertainty associated with the probabilistic tuning, expressed as the 95% confidence interval. (c) Alignment of $\delta^{18}\text{O}$ data from core GeoB2806-4 (red line) with the Deep South Atlantic (DSA) $\delta^{18}\text{O}$ stack (black line), with 1 σ uncertainty represented by the shaded grey area.

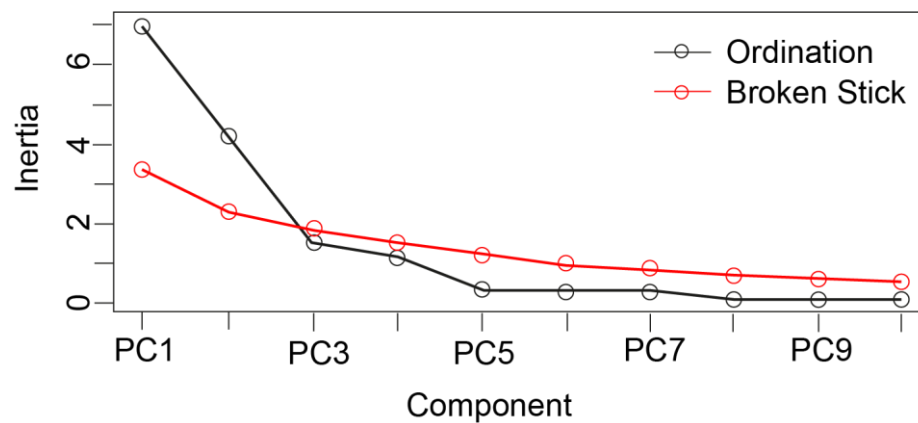


Figure S2: Screeplot of eigenvalues compared with the broken stick model. The intersection of the observed eigenvalues (black line) with the broken stick distribution (red line) indicates the maximum number of principal components to retain.

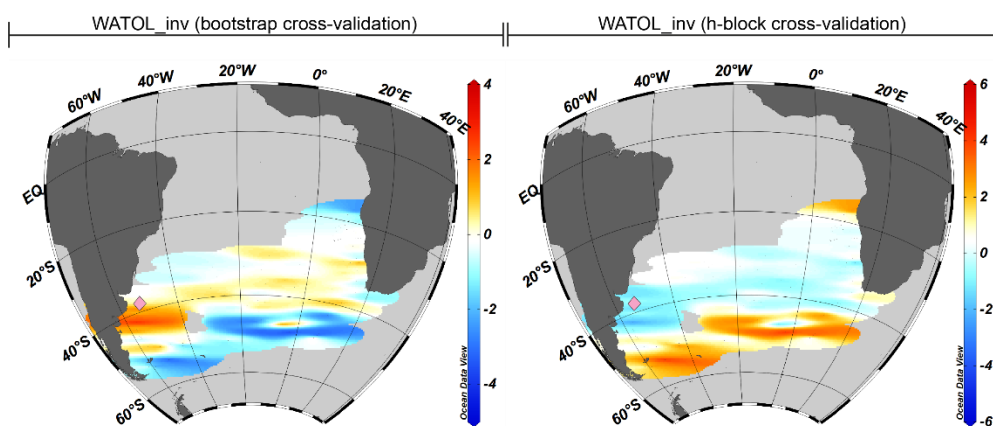


Figure S3. Spatial distribution of residuals from bootstrap and h-block cross-validation of the WATOL_inv model. Red areas indicate overestimation, blue areas underestimation, and white areas minimal residuals. The purple diamond marks the location of core GeoB2806-4.