

Cobalt-based age models of pelagic clay in the South Pacific Gyre

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Contents of this file

Caption for Table S1

Figures S1 and caption for Figure S1

Additional Supporting Information (Files uploaded separately)

Table S1

Introduction

The supporting Table S1 reports all the numerical data that was generated in this study and is illustrated in Figures 2 through 7. The supporting Figure S1 is similar to Figure 5, but depicts depth vs. instantaneous sedimentation rate at Sites U1365, U1366, U1369, and U1370. The data plotted are from samples analyzed in this study using the model described in the main text and reported in Table S1.

Table S1. Pelagic clay samples from sites drilled during IODP Expedition 329, Co and Al concentrations, Dry Bulk Density, and Co-based model parameters and results. Data are overspecified to avoid rounding errors during calculations.

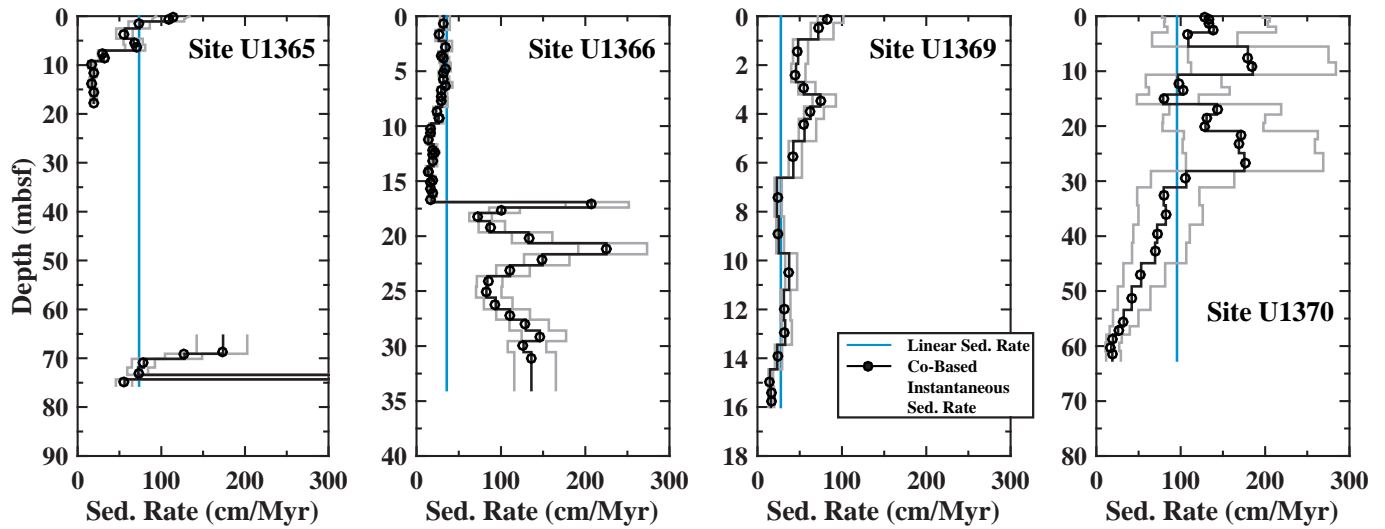


Figure S1. Instantaneous sedimentation rates (cm/Myr) vs. depth (mbsf) for the Co-model at Sites U1365, U1366, U1369, and U1370.

Instantaneous sedimentation rates are an average of three models using a non-detrital flux estimate of $1650 \mu\text{g}/\text{cm}^2/\text{Myr}$, $2350 \mu\text{g}/\text{cm}^2/\text{Myr}$, and the estimate calculated specific to each site (black line). The gray lines represent the maximum and minimum sedimentation rates produced by the three non-detrital flux values. For comparison, the linear sedimentation rate is plotted assuming a simple linear sedimentation rate from the seafloor to the basement (or to the K-Pg boundary at Site U1370) (blue line).

When calculating the non-detrital flux of Co and ages at a specific site, it is necessary to assume that a sample composition is representative of the composition of a segment of core. In this study, each sample represented a stratigraphic mid-point of an interval of core, so that some of the sediment above and below that sample was assumed to be of the same composition as that sample. The black and gray lines represent the instantaneous sedimentation rate at each depth assuming each sample is the stratigraphic mid-point of a depth interval.