

Sediment resuspension and its contribution to sinking particles in the ocean

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We examined literature data of sediment trap studies to understand the contribution of resuspended sediment to sinking particles in the ocean. Lithogenic material, or non-biogenic component, comprised a considerable fraction of sinking particles. Lithogenic material flux showed attenuation with increasing distance from seafloor in general. Globally, lithogenic material accounted for $26\pm 22\%$ of sinking particles. Aged POC (particulate organic carbon) accounted for $28\pm 13\%$ of sinking POC based on radiocarbon mass balance. A negative correlation between the radiocarbon isotope ratio and a ratio of Al/(Al+POC) implies that radiocarbon content of sinking POC was mainly controlled by inclusion of aged POC associated with aluminosilicate minerals supplied from sediment resuspension. The radiocarbon isotope ratio showed a linear relationship with a ratio of lithogenic material/POC content. Implications of these relationships will be discussed in the presentation.