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Abstract Information

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ORGANIC COMPOSITION OF IN SITU PUMP VS. SEDIMENT TRAP SAMPLES: IMPLICATIONS FOR THE EXCHANGE OF MATERIAL BETWEEN SUSPENDED AND SINKING PARTICLES

As aggregates sink through the water column, do most remain fairly intact or do they undergo extensive disaggregation and reaggregation? This question has implications for the amount and composition of organic matter exported to the deep sea. To assess the extent of exchange between sinking aggregates and suspended material, we compared the amino acid and pigment compositions of in situ pump and indented-rotating-sphere sediment trap samples collected from the Dyfamed site (a French JGOFS time-series site) in the northwest Mediterranean Sea. Whereas sediment traps collect sinking particles, pumps filter both the suspended and sinking pools. If aggregates remain fairly intact as they settle, we would expect more rapid export and better preservation of aggregated material, leading to greater compositional differences (especially in decomposition indicators) between trap and pump samples with depth. If aggregates are continuously repackaged as they settle, we would expect more remineralization of aggregates and greater similarities between trap and pump samples. This information has the potential to greatly improve our quantitative understanding of mechanisms controlling the vertical transport of different organic compounds in the ocean.

Abstract is:

Presentation Preference: Oral

First Session Choice: SS23 Conundrums and Controversies: What Contributes to the Vertical Flux of Carbon, Nitrogen, and Phosphorus in Aquatic Ecosystems?

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