

Thanks for Dr. Santschi's constructive comments. Indeed, the possibility of underestimating the ^{210}Po flux due to particle degradation during the trap deployment cannot be ruled out. Except Heussner et al. (1990), we are aware that the regeneration of ^{210}Po from degradation of trap particles was not checked in existing literature. We have recently obtained a new batch of trap samples, including trap solution, collected from the SEATS. The samples are currently being measured for ^{210}Po level in the trap solution of each cup. The regeneration issue will then be resolved once the data is available.

In response to the constructive comments of Dr. Santschi, we have made revision of the manuscript, which are summarized below:

- More detailed description of the sediment trap sampling was given in method.
- The residence time of ^{210}Pb in the Gulf of Mexico was also compared with that in the SCS.
- Some discussion on the regeneration issue is added when the discrepancy between the modeled and measured ^{210}Po flux was described.

Heussner, S., R. D. Cherry, and M. Heyraud (1990), ^{210}Po , ^{210}Pb in sediment trap particles on a Mediterranean continental margin, *Cont. Shelf Res.*, 10, 989-1004.