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Silicon-32 as a tool for studying silicon behavior in estuaries

Abstract—Cosmogenic ^{32}Si has been used as a tracer to study the behavior of stable silicon in the Gironde estuary, southwest France, particularly to identify the source of excess stable silicon observed in low salinity areas.

The results indicate that the dissolved ^{32}Si behaves conservatively in mixing in the estuary and that the excess stable silicon found in the low salinity zone is likely to be anthropogenic.

Knowledge of the flux of dissolved components through rivers to the ocean is important to an understanding of the marine geochemical balance and to postulating a steady state model for the ocean (Mackenzie and Garrels 1966a,b). Only a rough estimate of the riverine flux of dissolved