

# **Influence of terrigenous supply from the African continent on sedimentary CaCO<sub>3</sub> distribution in the Southeast Atlantic Ocean**

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Terrigenous materials are transported to the ocean via various pathways, which can modify wt% CaCO<sub>3</sub> in marine sediment and mask CaCO<sub>3</sub> dissolution profiles, especially in ocean margins. Although the effect of terrigenous dilution on marine CaCO<sub>3</sub> has long been established, there is still a lack of quantitative assessment on how terrigenous input shapes sedimentary CaCO<sub>3</sub> depth distribution features. In this study, we focus on the CaCO<sub>3</sub> depth distribution patterns on the seafloor in the Southeast Atlantic Ocean. Based on an up-to-date compilation of surficial sedimentary CaCO<sub>3</sub> content data and a simple conceptual model, the regional dilution effect of terrigenous supply from the African continent on the basinal sedimentary CaCO<sub>3</sub> depth distribution is quantified. Our results show that the flux of noncarbonate materials needed to reproduce the carbonate distribution decreases with distance to the African continent. The noncarbonate flux to pelagic sediment in the Southeast Atlantic Ocean is on the same order of magnitude of the dust deposition rate, while the flux to marginal sediment is intensified as a consequence of the fluvial discharge. Moreover, enhanced dissolution of CaCO<sub>3</sub> is found in marginal regions, which is due to faster rates of deep (boundary) currents than those in the pelagic ocean. These new insights help to distinguish the dilution impact from carbonate dissolution patterns and will advance research on land–ocean interaction and paleoclimate/environment reconstructions in ocean margins.