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Seasonal particle fluxes and superimposed re-suspension events in the Mozambique Channel

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The Mozambique Channel is at the origin of the greater Agulhas Current system and acts as an important gateway for the through-flow of Indian Ocean water, North Atlantic Deep Water and Antarctic water masses. In order to assess particle provenance and fluxes in the channel its currents were monitored by *in situ* ADCP moorings which were coupled to monthly-resolved particulate matter fluxes intercepted by sediment traps deployed on the 2700m deep channel floor. These show a strong seasonality in particle fluxes, which is associated with seasonally varying precipitation and, thus, increasing or decreasing sediment input via river discharge. Pronounced peaks, which are superimposed on this seasonality are related to re-suspension events caused by Mozambique eddies (upper 1500m) or deep current reversals (below 1500m) carrying up to 70% of clay to silt-sized particles. However, these peaks can also be caused by passing tropical cyclones that increase riverine input as well as transport of terrigeneous and shelf material into the channel. The associated minima in the nitrogen isotopic composition of transient particle fluxes certainly point towards storm or flooding events.