

^{230}Th corrected export production fluxes in the Southern Indian Ocean: glacial-interglacial changes in the efficiency of the biological pump

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When looking at glacial-interglacial time scales, the Southern Ocean becomes the most important factor in modulating climate changes as it represents the main leakage of CO_2 [1]. This CO_2 -exchange between the ocean and the atmosphere is mainly controlled by variations in the efficiency of the biological pump, which depends on ocean's vertical mixing, remineralisation of nutrients and CO_2 and accumulation of organic matter in the abyss. The reconstruction of paleofluxes of export production, oxygenation state and nutrient upwelling can give insight into past ocean behaviour [2] [3]. New sediment cores from the Southern Indian Ocean increase the temporal and spatial resolution of existing records, which until now mainly focus on the Atlantic Sector of the Southern Ocean. Our highly resolved sediment cores will be used for many different analyses: Sediment accumulation rates will be corrected for redistribution by ^{230}Th normalization. Proxies for opal and carbonate fluxes, iron supply, biogenic barium, organic tracers and redox sensitive trace metals will sum up to a sound picture of past Southern Ocean dynamics. First results are in good agreement with previous studies from the Southern Ocean [4] and allow for further comparisons in order to lead to a better understanding of past atmospheric CO_2 -changes.

[1] Sigman and Boyle (2000) *Nature* **407**, 859-869. [2] Anderson et al. (2009) *Science* **323**, 1443-1448. [3] Martinez-Garcia et al. (2014) *Science* **343**, 1347-1350. [4] Jaccard et al. (2013) *Science* **339**, 1419-1423.