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Abstract

Marine particle fluxes from high productive coastal upwelling systems return upwelled CO_2 and nutrients to the deep ocean and sediments and have a substantial impact on the global carbon cycle. This study examines relations between production regimes on the shelf and over the continental margin of the Benguela Upwelling System (BUS) in the SE Atlantic Ocean. Data of composition and timing of vertical particle flux come from sediment trap time series (deployed intermittently between 1988 and 2014) in the regions Walvis Ridge, Walvis Bay, Luederitz and Orange River. We compare their seasonal variability to modelled patterns of chlorophyll concentrations in a 3-D ecosystem model. Both modelled seasonal chlorophyll α standing stocks and sampled particle flux patterns are highly correspondent with a bimodal