



A new tool to study the fertilising effect of Saharan dust at sea

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Massive amounts of dust (>200 Million Ton) are blown from the Sahara into and over the Atlantic Ocean every year. This dust strongly alters the atmosphere through blocking incoming solar radiation [cooling the atmosphere] and trapping outgoing heat that was reflected at the earth's surface [warming the atmosphere]. In addition, aerosols carry huge amounts of metals and nutrients that can boost marine life, but also vast amounts of microbes, spores, and pathogens that are harmful for both marine- and terrestrial (including human!) life. The net effect of cooling/warming and ocean fertilisation/poisoning is presently far from understood as it depends on a complex set of parameters related to dust emission, dispersal, and deposition. In order to quantify these parameters, we are carrying out a novel approach to study the transatlantic flux of Saharan dust and its environmental effect on the ocean with classic marine sediment traps and three new dust-collecting surface buoys sampling the Saharan dust plume between NW Africa and the Caribbean. Here, we focus on the design, functionality, and initial results of the dust-collecting buoys that were constructed at NIOZ, and which have been deployed in the Atlantic Ocean in November 2013.