



Bacterial profiling of Saharan dust deposition in the Atlantic Ocean using sediment trap moorings – year one results

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Large quantities of dust are transported from the Sahara Desert across the Atlantic Ocean towards the Caribbean each year, with a large portion of it deposited in the ocean. This dust brings an array of minerals, nutrients and organic matter, both living and dead. This input potentially fertilizes phytoplankton growth, with resulting knock-on effects throughout the food chain. The input of terrestrial microbial life may also have an impact on the marine microbial community.

The current multi-year project consists of a transect of floating dust collectors and sub-surface sediment traps placed at 12°N across the Atlantic Ocean. Sediment traps are located 1200m and 3500m below the sea surface and all are synchronized to collect samples for a period of two weeks. The aim is to understand the links between dust input and the bacterial community and how this relates to ocean productivity and the carbon cycle.

The first set of sediment trap samples were recovered using the RV Pelagia in November 2013 with promising results. Results from 7 sediment traps (three at 1200m and four at 3500m) were obtained. In general, the total mass flux decreased as distance from the source increased and the upper traps generally held more material than those at 3500m. Denaturing Gradient Gel Electrophoresis (DGGE) was used as a screening technique, revealing highly varied profiles, with the upper (1200m) traps generally showing more variation throughout the year. Several samples have been submitted for high throughput DNA sequencing which will identify the variations in these samples.