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## Duststorms and bacterial diversity in the Mediterranean

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The Sahara region of Africa is the Earth's largest source of aerosolized soil dust. It is estimated to contribute as much as one billion tons of soil per year to the global atmosphere. African dust is transported to the Mediterranean region under particular meteorological conditions occurring during spring and summer. These dust events inject a huge amount of microorganisms like fungal spores, bacteria, archaea, and viruses. They affect visibility, climate, human health and the quality of life. Once these particles are in the atmosphere, transformation, transport and removal can take place. These processes depend on several factors, such as aerosol sizes, concentration and chemical composition, location and meteorological effects. Considering the importance of airborne microorganisms for human health, agricultural productivity and ecosystem stability, we assessed the bacterial composition during several sandstorm events in the South of Greece that occurred from January 2013 until the April 2014.

In total twenty-three (23) samples have been characterized using Illumina amplicon sequencing. In more detail the fusion primers U341F and 805R were used to amplify the V3-V4 region of the 16S rRNA gene. Sequencing data will be analyzed using the bioinformatics tools QIIME and custom scripts. In more detail data analysis involves the following: i) filtering of low quality sequences, ii) alignment of sequences (SILVA database), iii) detection and removal of chimeras, iv) clustering sequences into OTU with 97% sequence identity and v) taxonomic assignment of OTUs. Our results indicate that during the dust events the relative abundance of *Alphaproteobacteria* and more specifically members of the *Rhizobiaceae* family are rising. The results of the sequencing barcoded PCR amplicons will be presented in more detail and the correlations between airborne bacterial communities will be discussed.

### Biography

Sofia Nikolaki has a first degree in Physics, University of Crete and an MSC in Biotechnology from the Agricultural University of Athens. She has recently joined the MGM research group of the University of Patras, Greece as a PhD student and she is currently working on Microbial communities and pesticide interactions in oilseed and sunflower.

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