International Master 2 Atmospheric Sciences: Research Training 2020-2021

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Eventually,

CaPPA Work Package: WP3

Polycyclic aromatic hydrocarbons (PAH) in atmospheric deposits on the northwestern and southwestern coasts of the Mediterranean Basin

Polycyclic aromatic hydrocarbons (PAH) are atmospheric pollutants that are emitted by incomplete combustion mainly from anthropogenic activities (fossil fuel combustion) and from natural sources (forest fires, volcanic eruptions, biogenic formation). According to their physico-chemical properties, they can be degraded in the atmosphere, transported over long distances, wet/dry deposited and re-volatilized. These semi-volatile contaminants can be found ubiquitously in the environment and their toxicity (carcinogenicity and mutagenicity) is of great concern for human health, terrestrial and aquatic ecosystems.
To improve the knowledge on the influence of global changes to the Mediterranean Basin and to study the variability of atmospheric deposition, PAH were collected by bulk deposition samplers during more than a year (starting in March 2019) on the northwestern and southwestern coasts (Marseille, FR and Sfax, TN) within the framework of a MISTRALS CNRS-INSU project.

The expected tasks will consist in: (i) the analytical treatment of atmospheric deposit samples in the laboratory, (ii) the characterization of the metrological performance of the analytical procedure and (iii) environmental data treatment and interpretation of the obtained results according to the scientific literature. The candidate should have a background in analytical chemistry, and basic computer skills useful for data treatment.

Key words: Bulk deposition, Mediterranean Basin, liquid-liquid extraction, liquid chromatography