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Post-Doctoral fellowship:

Oxidative potential (OP) and chemical composition of particulate matter in Marseille

Scientific context. Marseille is the second largest in France. The population here is exposed to a variety of anthropogenic (traffic, residential heating, cooking, shipping, industry) and biogenic (terrestrial vegetation, marine aerosols) pollutants. High levels of fine particles have often been observed in the city, where mortality rate and cardiovascular hospital admissions are high, even higher than in Paris.

Subject. A 1-year campaign in Marseille-Longchamp supersite will represent the central element of the PhD. This is an atmospheric urban observatory (Atmosud/LCE, <https://www.hermes-aq.com/>) dedicated to the long-term and near-real time chemical and physical characterization of submicron aerosol (PM₁). The candidate will collect both online real-time and off-line PM₁ particles. On-line instrumentation includes: SMPS (number and size distribution of particles), ACSM (for ions and organic fraction), Xact (for trace metal fraction), and aethalometer (AE33) to gain further insights into the Black Carbon (BC) sources (biomass burning vs fossil fuel emissions). During the whole year PM₁ filters will be daily collected to conduct offline measurements of the chemical composition of PM₁ and the oxidative potential. OP will be also measured with an on-line automatic instrument (ROS online with 20 min resolution) for a period of 3 to 4 months (intensive campaign).

Methodology/Data analysis. The candidate will participate to the field campaign in Marseille by collecting, treating and validating the produced data. The data will be analyzed to resolve the PM₁ chemical composition and OP. The PM₁ source contribution of different pollution sources will be determined using the rolling PMF approach.

Post-doc details:

- *Location:* the candidate will be hosted at LCE in Marseille (France) at the LCE laboratory (lce.univ-amu.fr). The candidate will spend also some time at the IGE laboratory at the campus of Grenoble-Alpes University (France) (ige-grenoble.fr)
- *Funding program:* The research activities will be funded by the SHIPAIR project (ANR) but the research program will benefit from a broader international network in the framework of the project RI-URBANS (<https://riurbans.eu/>)
- *Requirements/Skills:* A PhD degree in atmospheric sciences, chemistry, physics or related subjects. The candidate must own good experience in scientific programming and data analysis (Igor Pro, R, Python, matlab...).
- *Salary:* Around/between 3470€ gross per month.

To apply, please send an email barbara.danna@univ-amu.fr and gaëlle.uzu@ird.fr containing a cover letter, a CV and a list of references.