



## **Air quality and students' health in Shanghai (China): an educational and scientific project**

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The quality of our environment and especially air quality is a hot topic in any urban environment. Hourly air quality data tend to be easily available to the populations either in the news or on mobile phones.

Studies underlining the relationship between environment and health exist in developed countries, but the results cannot be used in such different environmental and sociological contexts as the ones we have in China.

In collaboration with the CNRS, students from the Lycée Français de Shanghai (LFS- 5th and 2nd grade) undertake a study in order to obtain an empiric relationship between the atmospheric pollutants they are exposed to in and out the classrooms, and their own health. This study is a part of a scientific and educational project including Beijing, and possibly other foreign schools in Asia later on.

The atmospheric pollution in China is essentially caused by particles from different sizes mainly coming from coal combustion. First, in order to quantify the pollution at Shanghai, the students are recording information regarding fine particles as PM<sub>2.5</sub> and PM<sub>1.0</sub>, NO<sub>2</sub>, SO<sub>2</sub>, and O<sub>3</sub> using active and passive sensors indoors and outdoors, within the school campus. CO<sub>2</sub>, temperature and relative humidity are used to qualify the confinement rate indoors. In parallel, approximately 100 students (chosen regarding their age, health records, residence time in China. . .) and some teachers are going to complete a monthly survey regarding their health. Moreover, they will perform some specific measurements to obtain their breathing performances by spirometry, and an indication of the inflammation of their lower airways by exhaled NO measurements. The protocol of these experimentations and the first results will be presented in the poster.

At the end of the project, these results will allow us to get a better knowledge about the air pollution we are exposed to, within the school campus, which will help us to adopt an optimized risk management protocol when pollution episodes occur.