

## Atmospheric micro-nanoplastics: State of the Art

Microplastics (MPs) and nanoplastics are an emerging environmental concern worldwide. MPs have recently been detected in the atmosphere of urban, suburban, and even remote areas, far away from known sources, suggesting the potential long-range atmospheric transport for MPs.

Observations are still scarce and cover some spots in Asia, Europe and North America, with a few measurements in the Arctic. Regarding the main properties of atmospheric MPs, items of any shape have been reported in atmospheric samples, even though MPs of fibrous shape seem to be more easily transported through the atmosphere (Liu et al., 2019). Compared to other environments, the predominant size of atmospheric MPs is much smaller, with a typical upper size limit of 100  $\mu\text{m}$  (with the exception of micro-fibers). A general reduction of the size can be observed passing from near-source to remote sites, while the amount of MP particles tends to decrease with increasing size.

The atmospheric transport of MPs strongly affects the source-sink dynamics of plastic pollution in different ecosystems, including transfer between terrestrial and marine environments (Zhang et al., 2020). Almost nothing is known at present about the processes governing emission, transport and deposition of MPs through the air and more research is certainly needed in this area.

Liu et al. (2019), *Environ. Sci. Technol.*, 53, 10612.

Zhang et al. (2020), *Earth-Science Reviews*, 203, 103118.