

## Study of the morphology of individual aerosol particles during the POLARUBI field campaigns

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The study of single particles using microscopy techniques, as scanning electronic microscopy (SEM) or transmission electronic microscopy (TEM), is time consuming and difficult to perform. However, the information obtained from these techniques, as the morphology or the aggregation state of the particles, provides valuable information that is not available by any other methods. This information can then be used to help in understand the source of the particles and their effect on human health, over the climate or others.

In this study, we collect aerosols in a region from north Norway, 300 km north of the Arctic Circle, in the Arctic Lidar Observatory for Middle Atmosphere Research, located in the Andøya island. Several campaigns had already took place and more measurements are planned to be carried out in the near future. We collect aerosol particles on filters for posterior analysis in the laboratory with the microscopes. The system is composed by an inlet, an in-line filter holder, a vacuum pump and a flow meter. The filters for analysis with the SEM are weighed before and after collection for determination of the amount of particulate matter. After weighed, the filters are prepared for observation on the SEM. The aerosols to be analyzed by the TEM are collected directly on the TEM grids. Both electron microscopes allow to see the size and morphology of the individual particles.

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