

# COMPARISON BETWEEN POLLUTANT CONCENTRATION IN THE SAMPLES OF FOG AND RIME WATER COLLECTED AT MT. MILEŠOVKA

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*Summary: The article aims at showing the differences in concentration of pollutants that are contained in the samples of fog and/or low cloud water in comparison with the water from rime. The results follow from the fog and rime measurements made at Mt. Milešovka (České Středohoří Mountains). They are compared with the results of other studies that also report the differences in fog and rime chemistry.*

Keywords: fog, low cloud, rime phenomena, Mt. Milešovka, water chemistry

## 1. INTRODUCTION

The concentration of pollutants in fog and/or low cloud water (only fog water in the next text) has been studied since 1999 by the collaborating teams of the Institute of Atmospheric Physics ASCR and the Institute of Hydrology ASCR. The water samples are collected in the north as well as in the south of the Czech territory. In the north, the fog water is collected at the two meteorological observatories, Milešovka and Kopisty, which belong to the Institute of Atmospheric Physics. They are located in the so-called "Black Triangle", i.e. the polluted industrial area near the border of the Czech Republic with Poland and Germany. In the south, the fog water is collected at station Churáňov (meteorological station of the Czech Hydrometeorological Institute) and at the facility of the Institute of Hydrology, Nové Dvory. In this article, attention is paid to the results from the mountain observatory of Milešovka with the largest number of samples collected. The active sampler is used to collect fog at non-freezing temperatures (see *Daube et al., 1987; Tesař et al., 1995; Fišák and Řezáčová, 1999* for sampler description). At temperatures below 0°C the sampling block with teflon wires would freeze and the instrument could be damaged. Consequently, the fog events occurring in winter at negative temperatures have to be excluded from processing.

In the winter period, only passive fog samplers can be used. However, it is not sure if the resulting samples consist of fog water only. Apart from rime, which requires fog to be present as a necessary condition to develop, the soft rime evolving independently of the fog can contribute to the sample (e.g., *Sobíšek, 1993; Fišák, 1994*). A certain contribution of dry deposition during the exposure of the passive collector cannot be avoided either.

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