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The silica gel dryer or the electrical heating. Which one is better to ameliorate humidity related anomalies using the MicroAeth AE-51?

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Relative humidity and rates of its change are relevant parameters in atmospheric sciences. Observations of output data of AE-51 aethalometer operating in ACS1000 humidity chamber reveal a strong dependence of attenuation when rapid relative humidity changes are present. Data collected in winter 2020/21 and in autumn 2021 suggests a probability of similar effects occurring during UAV measurements as thermodynamic parameters could change fast during such runs. The effect is caused by an apparatus' design preventing humid air to reach the part of the filter used as a reference. The measurement device compares the wet part of the filter to the dry reference part and produces sharp excursions in the output signal. These effects can be limited by introducing a drying unit as a part of an inlet. The presented study was aimed to compare a drying unit utilising a silica gel (passive drying) and a heated part of an inlet (active drying).