## SAPHIR\* - first results from a new atmospheric research reactor for mechanistic studies

Thursday 22 June 2023 10:40 (15 minutes)

In recent years our knowledge of the atmosphere and the underlying processes has grown a lot. However, there are still many open questions. One research field of high complexity is the atmospheric aerosol, and related to it, the topic of aerosol formation, processing, and aging.

In addition to natural sources of aerosol particles like secondary aerosol formation from biogenic precursors, anthropogenic sources might add to or influence above mentioned sources. A future changing climate might further impact on these processes.

To approach and investigate such complex systems and relations on a mechanistic level we have designed and build SAPHIR\*, a continuously stirred tank reactor (CSTR) for investigation of secondary aerosol formation. Here we present some first exiting results that also illustrate the capabilities of this system for investigations and an advancement of our mechanistic understanding. These gains might even help to improve modelling and climate predictions.

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Session Classification: New observational systems and sources of information

Track Classification: New observational systems and sources of information