



AEROSOL-CLOUD-INTERACTION AT JOYCE

ExOb-presentation: Own Work

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The Influence of Pollution on the Shortwave Albedo of Clouds

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26 October 1976 and 5 April 1977

ABSTRACT

By increasing droplet concentration and thereby the optical thickness of a cloud, pollution acts to increase the reflectance (albedo) of clouds; by increasing the absorption coefficient it acts to decrease the reflectance. Calculations suggest that the former effect (brightening of the clouds in reflection, hence climatically a cooling effect) dominates for thin to moderately thick clouds, whereas for sufficiently thick clouds the latter effect (climatically a warming effect) can become dominant.



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Atmospheric
Measurement
Techniques



Ground-based remote sensing scheme for monitoring aerosol–cloud interactions

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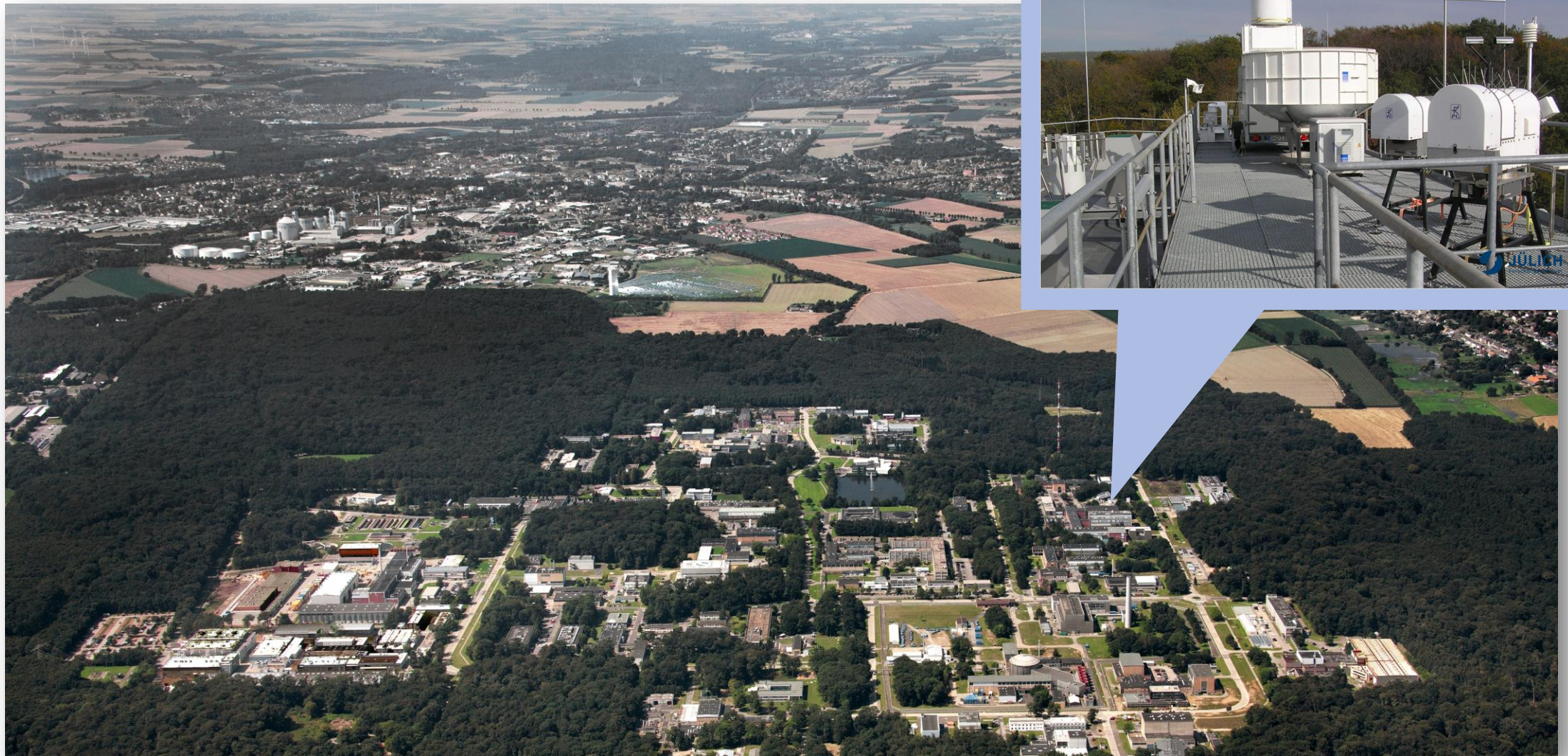
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“While the results are generally relevant to the scientific community, the paper could be strengthened by considering more Cloudnet stations to gain more robust statistical results from a larger dataset.”

Sarna, K., & Russchenberg, H. W. J. (2016). Interactive comment on “Monitoring Aerosol-Cloud Interactions at CESAR Observatory in the Netherlands” by. Atmos. Meas. Tech. Discuss. <https://doi.org/10.5194/amt-2016-262-RC2>







RESEARCH QUESTIONS



Is the backscatter signal of a ceilometer suitable to represent Cloud Condensation Nuclei (CCN) concentration?



Is it possible to confirm and quantify ACI-effects on a long-term JOYCE dataset?

WHAT HAS BEEN DONE SO FAR?

Münkel et. al., 2006

Wiegner et. al., 2012 & 2014

Sundström et. al., 2009



MY PLAN

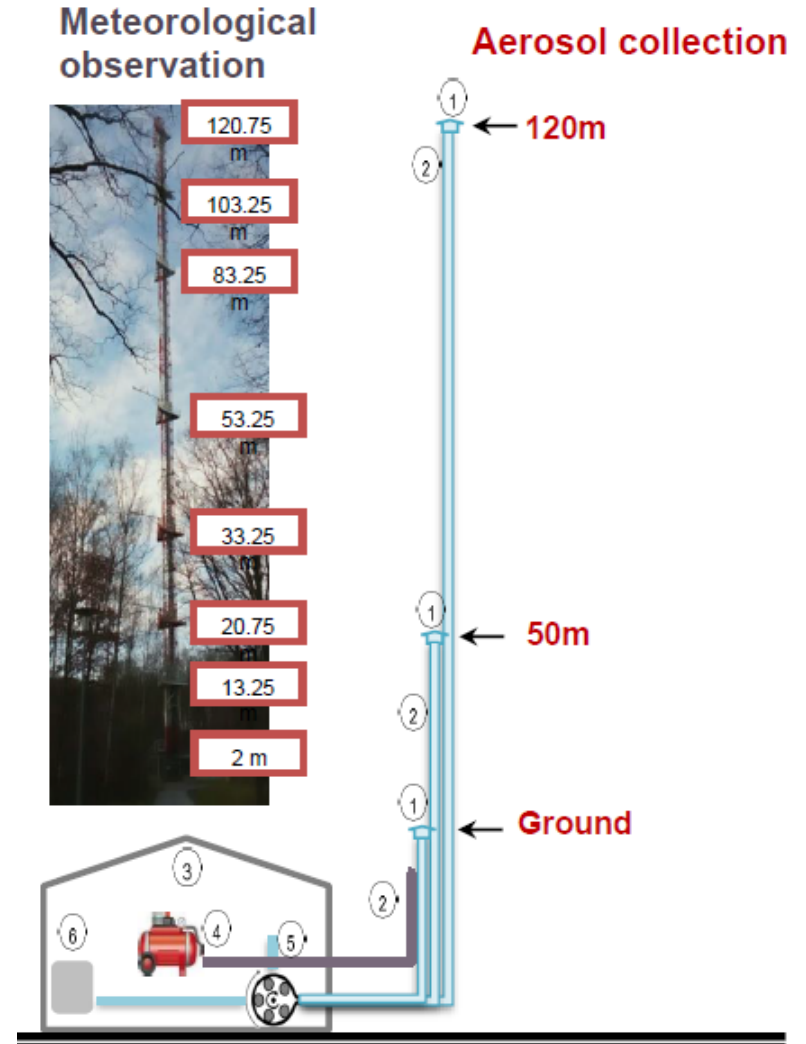
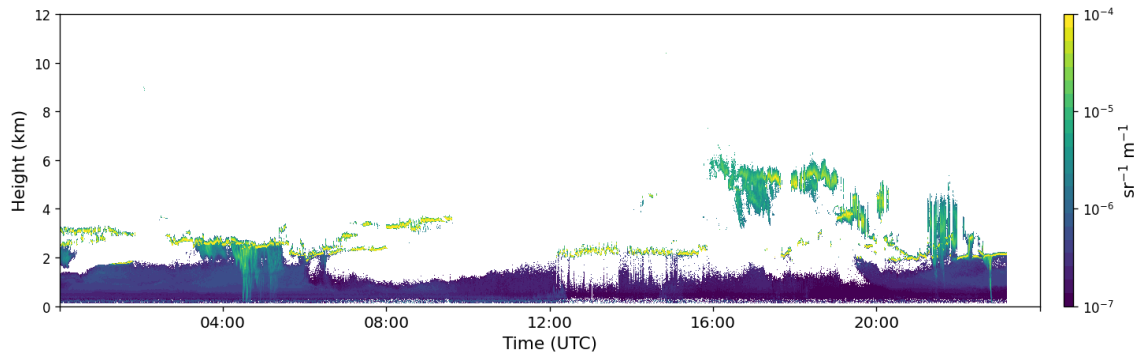
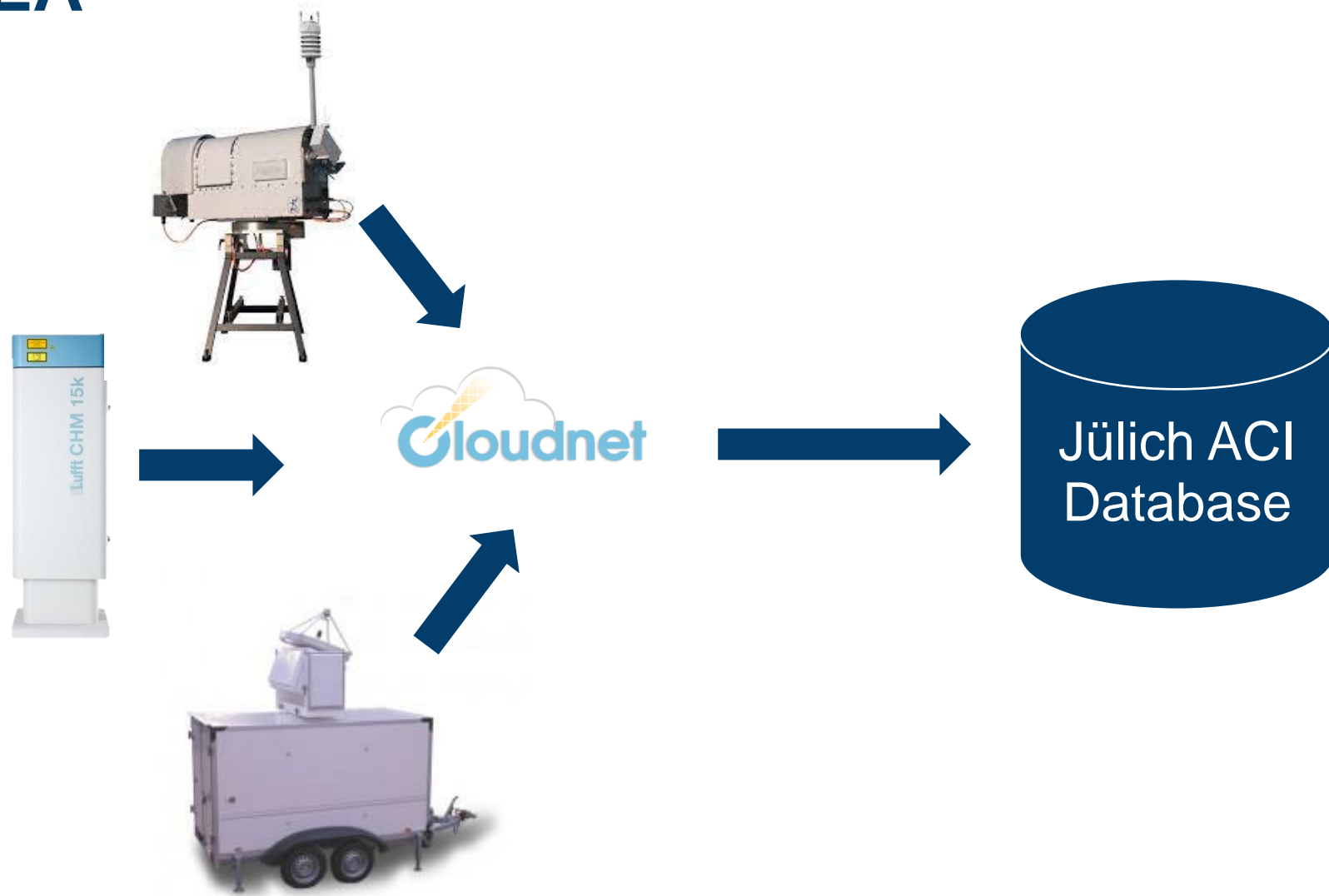


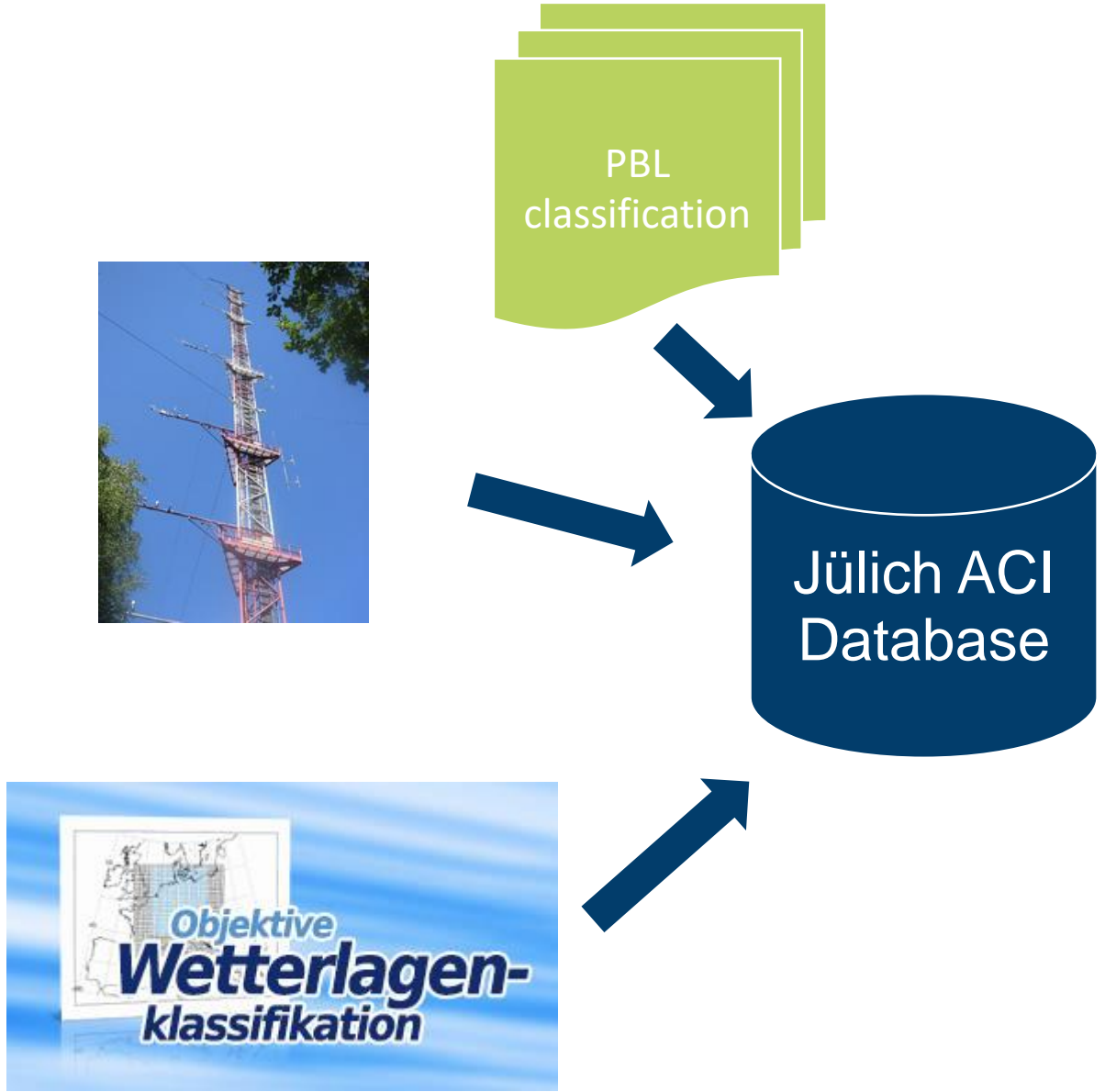
Image: Yan et. al.



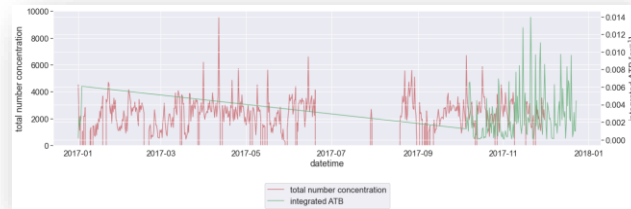
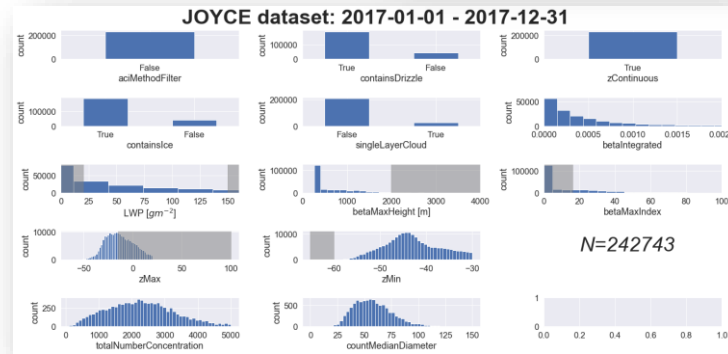
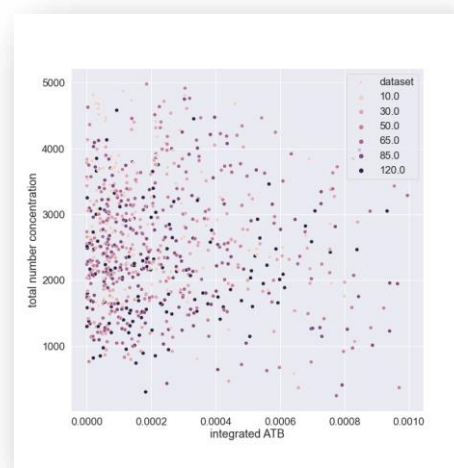
THE IDEA



THE IDEA



THE IDEA

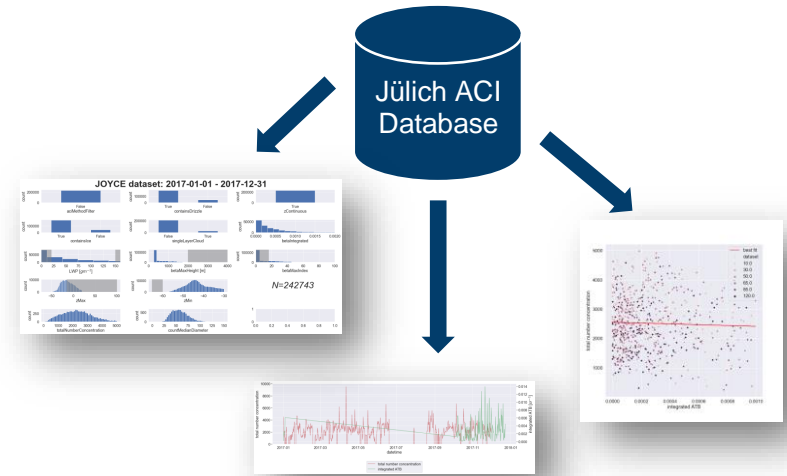


STATUS

- Preparation
- Database Imports
 - In-Situ Tower-Measurements
 - DWD Weather Type Classification
 - Vertical integrated ATB
 - BL-Classification
- Generating analyses



CONCLUSION



Sarna et. al.

