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## A comparison of lidar depolarization and particle asphericity in high altitude clouds

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We present and discuss the comparison between particle depolarization measurement observed in-situ by a backscattersonde (MAS) and particle asphericity measured by an optical particle counter and sizer with detector for particle asphericity (NIXE-CAPS), in high altitude clouds.

To our knowledge, this is the first time the in situ measurements of particle asphericity are directly compared with particle depolarization, an optical parameter usually accessible in remote sensing.

The two instruments flew together on the high altitude research aircraft M55 Geophysica, during the STRATOCLIM campaign in 2017, over Nepal. Particle asphericity and depolarization measured in cirrus clouds will be compared and their dependence on the particle size distribution parameters will be studied. While relationships have been found between depolarization, asphericity and some microphysical parameters of the particle size distribution, quantitative correlations between asphericity and depolarization do not appear. We will discuss possible explanations for this apparent lack of quantitative correlation.