

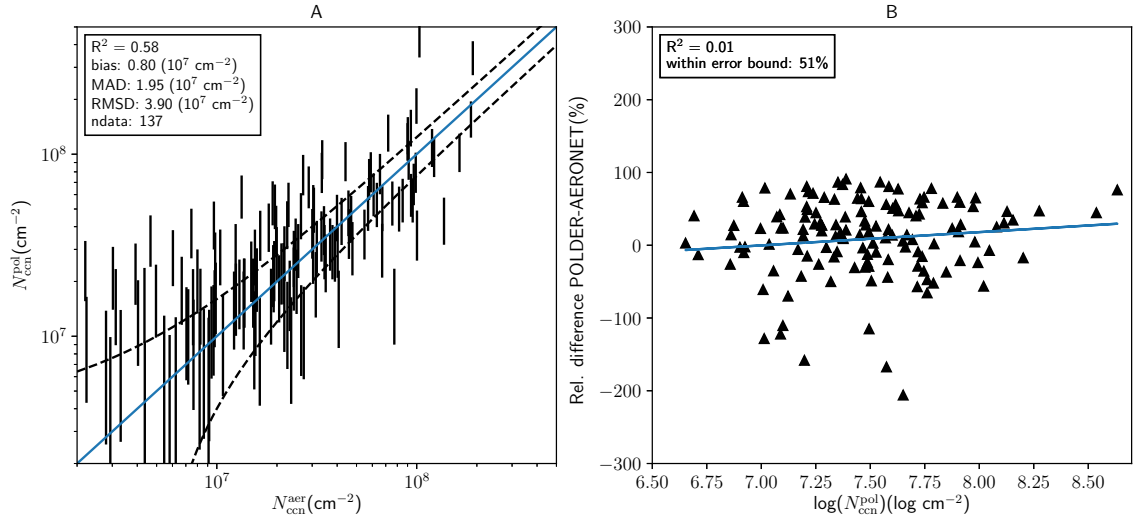
Supplementary information to “Analysis of polarimetric satellite measurements suggests stronger cooling due to aerosol-cloud interactions”

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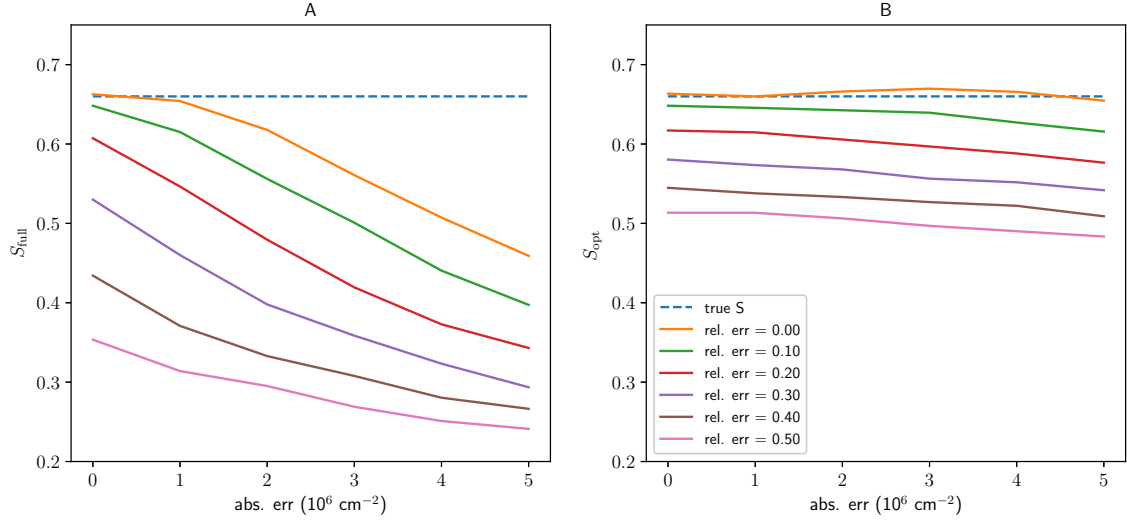
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Supplementary Figure 1 - Comparison POLDER CCN column number with AERONET. (A) POLDER retrieved Cloud Condensation Nuclei (CCN) column number (N_{ccn}^{pol}) versus AERONET N_{ccn}^{aer} . AERONET data within the POLDER grid cell (1° by 1°) and taken on the same day have been used. The blue line shows the identity line. Error bars show ($1-\sigma$) uncertainty found from synthetic experiment. Data within the dashed lines have a difference smaller than $(0.20 \cdot N_{ccn} + 4 \cdot 10^6)$. (B) Relative difference between POLDER and AERONET ($(N_{ccn}^{pol} - N_{ccn}^{aer}) / N_{ccn}^{pol} \cdot 100$) as function of $\log(N_{ccn}^{pol})$. The blue line shows the linear regression.



Supplementary Figure 2 - Effect of Measurement Uncertainties. Derived susceptibilities from simulated measurements of Cloud Condensation Nuclei (CCN) column number (N_{ccn}) and cloud droplet number concentration (N_d) as function of absolute error on N_{ccn} for different values of the relative error. Panel A shows results for S_{full} derived using the full range of N_{ccn} and panel B shows results for S_{opt} using only $N_{\text{ccn}} > 10^7 \text{ cm}^{-2}$. Synthetic retrievals and comparison to AERONET points out that $(0.20 \cdot N_{\text{ccn}} + 4 \cdot 10^6)$ is a realistic error estimate. The true susceptibility for the simulated measurements is $S=0.66$.