

# Studying potential link between phytoplankton and water cloud microphysics at high latitudes using 11 year CALIPSO lidar measurements

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CALIPSO satellite started taking lidar measurements of the atmosphere and ocean since 2006. The lidar measurements provide unique information about high latitude water cloud microphysics (Hu et al., 2007) and ocean subsurface measurements (Behrenfeld et al., 2013; Behrenfeld et al., 2016) all year round. Lidar can make measurements of ocean subsurface at high latitudes all season, including winter, since it provides its own light and it can measure ocean subsurface from holes between clouds (Behrenfeld et al., 2016). Lidar also provide unique water cloud microphysics measurements since its depolarization ratio measurements are sensitive to droplet number concentration and extinction coefficient. This study investigate correlations of high latitude cloud microphysical property anomaly and ocean phytoplankton carbon anomaly during the last 11 years in order to evaluate the link between ocean biogeochemistry and cloud radiative forcing.

Reference:

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Keywords: lidar, cloud, phytoplankton