



## **PSC and stratospheric temperature observations at ALOMAR: Implications for water vapour concentration in the mid stratosphere**

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Since 1995, the Norwegian ozone DIAL system at the ALOMAR Observatory, North-Norway, has measured, besides ozone profiles, a considerable number of polar stratospheric clouds and stratospheric temperature profiles outside the PSC layer. There are, however, also numerous measurements under very cold stratospheric conditions, especially in early winter, without any indications of PSCs or with PSC indications at the detection limit of the system. These data can be used to estimate upper limits of water vapour concentration in the respective altitude region, a parameter of which there exists only very sparse information. I will present an overview of all PSC and temperature data acquired with the ALOMAR ozone lidar in the period November – February from 1995 to 2008 and resulting maximum water vapour values. Furthermore, case studies including back trajectory analyses will be presented for selected periods, such as December 2002 and December 2005, where both PSCs and PSC-free measurements were taken under very similar stratospheric conditions.