

***Interactive comment on* “Observation of Polar Stratospheric Clouds down to the Mediterranean coast” by P. Keckhut et al.**

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We can confirm the ground-based Lidar detection of Polar Stratospheric Clouds (PSCs) at mid-latitudes on 18 and 19 January 2006 by global measurements with the Michelson Interferometer for Passive Atmospheric Sounding (MIPAS) on Envisat. Figure http://www-imk.fzk.de/asf/ame/envisat-data/mipas_psc_18-21_Jan_2006.png shows cloud top heights derived from MIPAS observations for the days 18 to 21 January 2006. PSCs appear as green, yellow and orange squares indicating PSC top altitudes between 18 and 25 km. On 18 and 19 January 2006 PSCs are located at latitudes of 40–60°N and at longitudes of 10°W on 18 and 0° on 19 January, respectively. On the following two days these PSCs have vanished.

Shown as red, green and blue contour lines are PSC threshold temperatures at 50 hPa

altitude for Nitric Acid Trihydrate (NAT), for Supercooled Ternary Solution (STS) and for ice derived from ECMWF analysis data. Obviously, the observed PSCs correlate best with the STS temperatures. Further analysis of the MIPAS infrared spectra with respect to composition [[Höpfner et al. \(2006\)](#)] shows STS as main constituent of the PSC on 18 and 19 January. This agrees with the supposition of the authors.

References

[[Höpfner et al. \(2006\)](#)] Höpfner, M., Luo, B. P., Massoli, P., Cairo, F., Spang, R., Snels, M., Donfrancesco, G. D., Stiller, G., von Clarmann, T., Fischer, H., and Biermann, U.: Spectroscopic evidence for NAT, STS, and ice in MIPAS infrared limb emission measurements of polar stratospheric clouds, *Atmos. Chem. Phys.*, 6, 1201-1219, 2006.

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