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First Climatology of Polar Mesospheric Clouds From GOMOS/ENVISAT Stellar Occultation Instrument.

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GOMOS on board the European platform ENVISAT is a stellar occultation instrument combining 4 spectrometers in the spectral range 250 to 950 nm (UV-visible- near IR) and 2 fast photometers. On the day side, GOMOS measures also the solar light scattered by the atmosphere. In the summer polar day, polar mesospheric clouds (PMC) are clearly detected using the photometers signals. The observation of PMC with the spectrometers provides the spectral dependence of the scattering by PMC particles from which it is possible to derive some information on particle size. The sun-synchronous orbit of ENVISAT allows observing PMC in both hemispheres. The stellar occultation technique allows a very accurate determination of the tangent altitude of the ray path (better than 100 m). The method of detection will be described and the climatology of PMC obtained by GOMOS will be presented, focusing on the seasonal and latitudinal coverage, the asymmetry between hemispheres and the determination of the mean altitude.