



Polar upper atmosphere monitoring by ground based stations

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The INGV Upper Atmosphere Physics Unit, besides carrying out historic ionospheric soundings at Rome and Gibilmanna observatories, performs experimental observations at polar latitudes since 1990. At the Italian Antarctic station “Mario Zucchelli” (MZS, geographic coordinates: 74.69°S, 164.12°E), the upper atmosphere observatory is equipped with the new digisonde AIS (Advanced Ionospheric Sounder), entirely designed and developed by INGV, and with four single beam riometers measuring the ionospheric absorption at 30, 38.2 and 51.4 MHz. From 2003 the group manages an ionospheric scintillations observatory located at Ny Alesund (Svalbard, Norway, geographic coordinates: 78.9° N, 11.9° E), equipped with two GISTM (GPS Ionospheric Scintillation and TEC Monitor) receivers. The deployment of another GISTM receiver in Antarctica, at MZS, is in progress. As the great interest around these rare and scarce experimental observations at high latitude, international collaborations started in 2004 also with the aim to contribute to the IPY through the UAMPY EoI-551 (Upper Atmosphere Monitoring for the International Polar Year 2007-2008), now part of the ICESTAR/IHY core project. Here a brief presentation of the scientific and technological activities managed by INGV at high latitudes, focusing on experimental equipments, data and products, will be presented.