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Statistical Correlation between GPS Scintillations and HF Backscatter

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It is expected that the level of GPS scintillations observed in the auroral regions correlate with ionospheric backscatter observed by coherent HF radars. To investigate such a correlation, we analysed several months of data from the INGV GPS receivers based at Ny Ålesund (Svalbard) and M. Zucchelli Station (Antarctica) and from the corresponding SuperDARN radars in the Northern and Southern hemispheres. The correlation between GPS scintillations and the SuperDARN HF backscatter occurrence and spectral width is discussed as a function of season, local time and geomagnetic latitude.