Comparison of the cross-field anisotropy of small-scale irregularities with plasma flow direction obtained by SuperDARN

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It is known that in the F layer high latitude ionosphere small-scale irregularities of electron density with scale sizes of hundreds of meters to several kilometers are extended along the geomagnetic field and in some direction in the plane perpendicular to the magnetic field. In this presentation satellite radio probing data on the orientation of the cross-field anisotropy of small-scale irregularities are compared with plasma flow direction obtained by SuperDARN. Experimental data on anisotropy of irregularities were obtained in a heating experiment in 1997 at three receiving sites spaced by approximately 100 km from each other in the northern Norway. The data of the plasma flow direction was obtained by SuperDARN. It has been shown that the small-scale irregularities in the plane perpendicular to the magnetic field are elongated in the ionospheric drift direction. The use of SuperDARN data mahes it possible to explain, in some cases, the observed different orientation of irregularities of different receiving sites.