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AUTUMN AND WINTER ANOMALIES IN IONOSPHERIC ABSORPTION AS MEASURED BY RIOMETERS

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Seasonal variations of ionospheric absorption have been studied using riometer (A2) measurements over a wide latitude range (Figure 1). In agreement with the results of earlier studies of Al radiowave absorption, equinoctial maxima of approximately equal amplitude are observed in the auroral zone and near the equator. However, at intermediate latitudes riometer absorption maximizes during the fall season, whereas the Al data show a semi-annual variation with maxima occuring in summer and winter (Figure 2). The autumn anomaly in riometer absorption is observed at much higher geographic latitude in the southern hemisphere, but at comparable geomagnetic latitudes in both hemispheres. The winter anomaly was seen only in absorption values calculated at constant solar zenith angle (Figure 3).

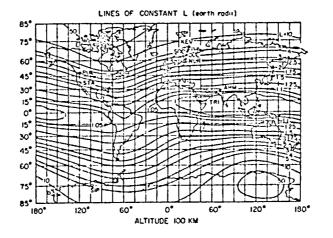
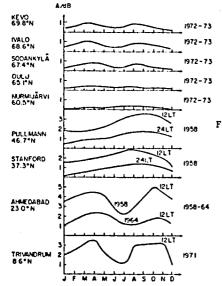
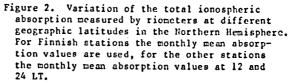


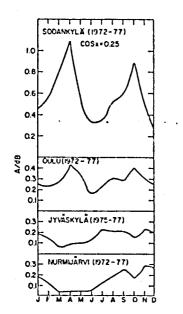
Figure 1. Location of the riometer stations.

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Figure 3. Seasonal variation of ionospheric absorption at constant solar zenith angle.

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