I-2-P2. Blackouts and Sporadic E Layers*

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Discussion

Hultqvist, B. K. G.: You mentioned that you had found the same spiral form for the precipitation curves for the aurora as for the E_s. I would be very interested to know under which conditions those auroral spirals have been observed.

Piggott, W. R.: I have used the times of peak auroral occurrence as shown by auroral observations at the zenith and also published curves of auroral incidence from the U. S. S. R. Both are expressed in the form of LMT—latitude variations. The slopes and intercepts for different longitude zones are compared with those found for E_s and Blackout in the same zones. Reasonable straight lines are obtained though the scatter is somewhat greater than in the ionospheric case. The big changes in slope 1 hour in 1.45° to 1 hour in 4.7° show in both as do the shifts in intercepts (phase delay).

I-2-P3. Drift of the E-Layer during Geomagnetic Storms

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Introduction

In the following the results of drift measurements of the ionosphere made in Norway will be given. The places of observations were Kjeller (near Oslo) at 60°N and Tromsö at 70°N. Both places are geomagnetically disturbed, Kjeller only during stronger storms, Tromsö,—lying close to the auroral zone,—by all geomagnetic storms.

Various methods and different frequency ranges have been in use and the main aim has been to trace the influence of geomagnetic storms on the *drift directions* of the ionosphere and to study the *anisometry* of the diffraction pattern.

In the following the results will be given of measurements carried out by the Norwegian ionospheric group on:

i) drift measurements of the *E*- and *Es*-layer using the Mitra method on 2 Mc/s.

ii) drift measurements of auroral echoes using a frequency on 40 Mc/s.

E-layer Drift Measurements

Series of measurements have been made at Kjeller and Tromso using the Mitra method.[1] The frequency used was 2—2.4 Mc/s and the distances between the receiving points were 130 m. A Phillips recorder was used and this equipment worked satisfactorily at Kjeller. On Fig. 1 the diurnal variation of the mean value of the wind vector observed at Kjeller during the *summer* season is given. Two series of observations have been made which gave similar results.

It is apparant that two different effects are present, the smooth semi-diurnal variation in the drift of the *normal E*-layer, at day time and the westerly drift of the *Es*—layer at night-time. Now the appearance of *Es* at Kjeller is usually connected with some geomagnetic disturbance and the westerly drift

* Both manuscript and preprint have not been received.

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