

## I-1-9. The Fine Structure of Magnetic Storm in Respect of Pulsations\*

V. A. TROITSKAYA, L. V. ALPEROVICH and M. V. MEDNIKOVA

### Discussion

**Veldkamp, J.:** Have you made an investigation on the simultaneity of maxima and minima of pulsation in different stations on the northern and the southern hemispheres?

**Troitskaya, V. A.:** We did not make any systematic comparison of simultaneity of maxima and minima of pulsations of such stations. Our main attention was called on distinction of types of pulsations which in first approximation always occurred simultaneously at stations situated at the ends of magnetic line, and of types of pulsations which are not governed by such law.

**Cardús, J.O.:** 1. The pulsation you speak of are those in earth-currents records or in magnetic records?

2. Some times with the ssc you can find also pulsations of the pt type, as if in some of the ssc's of November 1960.

**Troitskaya:** 1. I speak mainly of results of analysis of quick-run records of earth currents and of pulsations with  $T \leq 20$  sec.

2. I agree that in the other frequency range we can find slow changes of the trace during ssc.

**Hultqvist, B.:** You mentioned that you had observed differences in the start of the sc of between 10 and 40 seconds. Is there a variation only in latitude or is there also a longitudinal variation?

**Troitskaya:** We could not find any systematic longitudinal variations. The numbers corresponding to the moments of ssc starting were dispersed very randomly.

**Fukushima, N.:** How much time in advance does some pulsations composing ssc take place in the polar region in the sunlit hemisphere?

**Troitskaya:** For the pulsations of the period 6-15 seconds, the initial pulsation in sunlit high latitudes appears about 10-40 seconds earlier than in the dark ones.

**Chernosky, E.J.:** 1. Would you discuss the sfe effect further in which there is no short period pulsations occurring during the time of the sfe?

2. Do you find that the 8-15 second period pulsations occur during the more quiet time?

**Troitskaya:** 1. We have found no definite and permanently occurring (as for instance in the case of pt) fine structure of sfe in the spectrum range  $T \leq 20$  sec.

2. Our preliminary conclusions are that they can occur, but their amplitude is significantly smaller.

**Jacobs, J.A.:** 1. Is the fine structure of sc's independent of the type of sc?

2. Are sc's simultaneous all over the world? If not, what is the difference in the time of onset?

**Troitskaya:** 1. The investigation of ssc fine structure was conducted up to date for all types of ssc without dividing them on ssc\* and ssc.

2. The oscillatory movements corresponding to the fine structure of ssc can be clearly revealed on the sunlit side of the earth. The relative slow changes on which these movements are superimposed could be recognized in all investigated latitude and longitude range. The intensity of these changes varies from case to case.

\* The content of this paper is almost the same with that of Paper No. II-1B-P3 read at the Session on Geomagnetic Rapid Variation. The paper is printed there, and only the discussion is given above.