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Forecast of solar radiation storms by on-line NM one-minute date, 3. Automatically determination of diffusion coefficient in the interplanetary space and energy spectrum in source

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Abstract. In paper Dorman et al. (2001) was described how works automatically the program "FEP-Research/Spectrum", determined on the basis of on-line one-minute NM data the FEP spectrum. We show that after this can be determined diffusion coefficient in the interplanetary space of FEP and energy spectrum in source. We consider two possibilities: 1) diffusion coefficient is known, 2) diffusion coefficient is unknown. We show that in the first case is necessary to determine energy spectrum of FEP in two different moments of time and from two equations automatically can be determined the energy spectrum in source. In the second case is necessary to determine energy spectrum of FEP in three different moments of time and from three equations automatically can be determined the energy spectrum in source and diffusion coefficient in the interplanetary space. We describe in details the algorithms of the programs "FEP-Research/Source" and "FEP-Research/Diffusion". We show how worked these programs on examples of some historical great FEP events.

REFERENCES

Dorman L.I. et al., Forecast of solar radiation storms by on-line nm one-minute data, 2. Automatically determination of FEP spectrum. , Proc. 27 ICRC, Paper SH&., 2001

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