EPSC Abstracts,
Vol. 4, EPSC2009-25, 2009
European Planetary Science Congress,

Radar observations and the incident flux density of meteor showers

G.O. Ryabova

Tomsk State University, Tomsk, Russia (rgo@rambler.ru)

Mathematical modelling of meteoroid streams formation was stimulated by increasing of computer power. Now, when large scale integration studies have become possible, we are able to construct extensive models explaining a meteoroid stream structure. Still there exists a problem, which can hamper the progress, namely, lack of flux-based activity curves of meteor showers. It is important, because activity curves constructed on the base of hourly rates can be distorted by observational selection [1, fig.18], [2, fig.4].

A method for calculation of the incident flux density of meteors on the base of radar observations was proposed by Kaiser [3–4] and developed by Belkovich and co-authors [1, 5]. Here a modification of the method is presented aimed at elimination of approximations [6, 7].

The presented method is a very model-oriented one. We can play with various physical models, but we should keep in mind that in reality the transmitter power, for example, is not stable, and many other parameters also. Nevertheless I believe that the method is good to obtain preliminary results very fast. Also it can be useful when we have lack of information, for example, when we process data of old observations.

The work was supported by Ministry of Education and Science of Russian Federation (Program AVZP № 2.1.1/2629).

References

[1] Belkovich, O.I. (1971) *Statistical theory of radar meteor observations,* Kazan University, Kazan (in Russian).

[2] Ryabova, G.O. (2007) *MNRAS,* 375, 1171–1180.

[3] Kaiser, T.R. (1955) in *Meteors,* Pergamon Press, London, 119–130.

[4] Kaiser, T.R. (1960) *MNRAS,* 121, 284–298.

[5] Bel'kovich, O.I. and Tokhtas'ev, V.S. (1974) *BAIC*, 25, 112–115.

[6] Ryabova, G.O. (2008) *WGN,* 36, 120–123.

[7] Ryabova, G.O. (2009) *WGN,* 37, 63–67.