

The discret solution of a quasy-thomography problem for construction of radiant distribution of meteors by results of radar goniometer measurements

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Abstract

It is the first submission of the new solution of a quasithomography problem of determination of spatial distribution of a meteoric complex constructed on the goniometer data of the meteoric radar. The previous solution obtained by Belkovich, Sidorov and Filimonova was based on submission about a ceaseless radiant distribution of sporadic meteors on a celestial sphere. In that solution the number of unknowns grew quadratically with increase of the angular measurement accuracy. Therefore stable solution was possible to receive only for the angular measurement accuracy $10^\circ \times 10^\circ$. Such accuracy is not enough for majority of problems of a meteoric astronomy. The new solution is obtained because of hypothesis about a discretization of angular radiant distribution of meteors. It assumes all meteor flux is submitted by not single meteors, but by system of showers and microshowers with identical velocities and angular parameters of meteors in each one. The method is based on a computer selection of such radiant distribution on a celestial sphere, which does not contradict a microshower hypothesis, to a mirror condition of reflection and is confirmed by independent measurements. The method is realized as computer technology for the goniometer processing for the discretization $2^\circ \times 2^\circ$, and it have used for determination of meteor radiant parameters at one day of radar observation at December 13, 1993.
