EPHEMERIS MEANING OF PARAMETERS OF ASTEROID'S APPARENT MOTION

N.O.Komarova

[1]*Pulkovo Astronomical Observatory,*
St.-Peterburg, Russia. E-mail: natali@OB3876.spb.edu

Method to solve an identification problem for moving celestial object was elaborated. It requares the object's coordinates α, δ and their two derivatives at given UT moment or the object's Apparent Motion Parameters: topocentric angular velocity μ and $\dot{\mu}$ acceleration, positional angle ψ and curvature C of celestial body trajectory. These parametrs are calculated with polynomial approximation of dense CCD object positions observed along a short arc of its moving on the background of reference stars.

It was shown that these new parameters have a large ephemeris meaning and allow to identify the registered object in interactive mode within an time interval up to a few weeks.

The EPOS and LAPLACE software packages developed at Pulkovo Astronomical Observatory were used to test and identify the asteroids observed during February 1999 by various world's observatories and published in MPC with preliminary numbers from 1999DA to 1999CA. The results obtained were compared with the identification of the International Minor Planet Center. Our method gave 16 new identifications in the considered data.