A STUDY OF THE PROPERTIES OF GALACTOCENTRIC ORBITS

A. A. Myullyari
University of Petrozavodsk, USSR

Yu. V. Nechitajlov
*St Petersburg State University, 198904 Petrodvorets, Bibliotechnaya
ploshchad' 2, USSR*

S. Ninković
Astronomical Observatory, Volgina 7, 11050 Beograd, Yugoslavia

V. V. Orlov
*St Petersburg State University, 198904 Petrodvorets, Bibliotechnaya
ploshchad' 2, USSR*

ABSTRACT. The galactocentric motion of 14 stars from the solar neighbourhood is studied. The stars are divided into nine groups according to their heliocentric-velocity components. In this way one can follow the motion of the stars belonging to the same group in the past.

We calculate the orbits for 14 stars from the solar neighbourhood; the Sun is among them. The data source is [1]. The stars are divided into nine groups according to the similarity in their heliocentric-velocity components. The galactic models applied in our calculations are [2], [3] and [4]. The aim of the study is to follow the motion of the sample stars to the past, to establish a possibility of belonging to a star stream and to examine the contours of their orbits. A preliminary result is that the selected stars belong to the thin disc, i. e. their galactocentric motion is possible to describe in Lindblad's epicyclic approximation.

REFERENCES

1. Gliese, W. (1969) 'Catalogue of Nearby Stars', Veroeffentlichungen des Astronomischen Rechen-Instituts, Heidelberg 22.
2. Sala, F. (1987) 'Galactic Kinematics: An Axi-Symmetric Time-Depending Model with Separable Potential', Rev. mex. astron. astrof. 14, 195-205.
3. Allen, C. and Martos, M. A. (1986) 'A Simple Realistic Model of the Galactic Mass Distribution for Orbit Computations', Revista mexicana de astronomia y astrofisica 13, 137-147.
4. Kutuzov, S. A. and Osipkov, L. P. (1989) 'Dvukhkomponentnaya model' gravitatsionnogo polya Galaktiki', Astronomicheskij zhurnal 66, 965-974.