BOOK OF ABSTRACTS

Actual Questions of Ground-based Observational Astronomy

MAO-200

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MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
RESEARCH INSTITUTE “MYKOLAIV ASTRONOMICAL OBSERVATORY”

ACTUAL QUESTIONS OF GROUND-BASED OBSERVATIONAL ASTRONOMY

International Conference

ABSTRACT BOOK

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The Book of Abstracts contains abstracts of presentations to the International Conference “Actual Questions of Ground-based Observational Astronomy” to be held in Mykolaiv, Ukraine, on September 27-30, 2021. Methods and technical means of ground-based observations, a role of the International Virtual Observatory Alliance (IVOA) in modern research and actual problems of ground-based astronomy are presented.

KINEMATICS OF SELECTED OPEN CLUSTERS OBTAINED BY COMBINING LAMOST DR5 AND GAIA DR2

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Context. Open clusters (OCs) are very important objects to study many astrophysical topics, including kinematics of the Galactic disc. High-resolution spectroscopic measurements of radial velocities (RVs) for selected OCs are available from LAMOST DR5 ground-based survey, which contains more spectra than Gaia DR2 catalogue, 9.0 and 7.2 millions respectively.

Aim. The aims are to compare RVs of common OCs from different catalogues and study kinematics of selected OCs around the Sun at distances of not more than 8 kpc.

Methods. The most probable members of selected OCs were taken from published paper of previous investigation obtained by using Gaia DR2 catalogue. Cross-correlation of equatorial coordinates allowed us to determine members of selected OCs among stars of LAMOST DR5 ground-based spectroscopic survey. Data processing was conducted by using TOPCAT (Tool for Operations on Catalogues And Tables).

Results. 3470 members of 306 selected OCs in declination range of -7º to +62º have been identified among stars of LAMOST DR5 survey. The weighted mean RVs and galactic velocities (GVs) in Cartesian system of coordinates have been determined for 212 selected OCs, which contain three and more members. The RVs and GVs of 85 selected OCs have been determined for the first time. The mean values of GVs for 85 selected OCs are (-2.5 7.8 -17.7) km/s. The mean velocity towards the southern Galactic pole is W= -17.7 km/s. The mean velocity in direction of galaxy rotation is V= 7.8 km/s. The mean velocity towards the galaxy center is U= -2.5 km/s.

Key words. Open clusters, radial velocities, galactic velocities, spectroscopic survey.