

CIRCULAR VELOCITY CURVE OF RED GIANTS AND SUB-GIANTS FROM THE GAIA EDR3 DATA

*A. B. Velichko, P. N. Fedorov, V. S. Akhmetov,
A. M. Dmytrenko, S. I. Denyshchenko*

*Institute of Astronomy Kharkiv National University,
velichko.anna.b@gmail.com*

In our study, we determine the circular velocity of rotation of red giants and sub-giants around the Galactic center for stellar systems with radii 0.5 and 1.0 kpc, located along the direction the Galactic center - the Sun - the Galactic anticenter within the range of Galactocentric distances R 0-8-16 kpc. We know that the Solar velocity V_{\odot} relative to the centroids is the difference between the vectors of the Solar velocity and the circular velocity of the centroids relative to the Galactic center. On the other hand, we know that the components of the Solar velocity vector relative to the center of the Galaxy are constant values. Consequently, the behavior of the components X_{\odot} , Y_{\odot} and Z_{\odot} is a reflection of the behavior of the circular velocity of centroids relative to the center of the Galaxy. The value of the circular velocity in the Solar vicinity is equal to 227.36 ± 0.11 km/s, that is in good agreement with those given in numerous papers.