

A COMPLEX STELLAR LINE-OF-SIGHT VELOCITY DISTRIBUTION IN NGC 524

I. Katkov¹, I. Chilingarian^{2,1}, O. Sil'chenko¹, A. Zasov¹

¹*Sternberg Astronomical Institute, Universitetskii pr. 13, Moscow, 119992 Russia*

²*Centre de Données astronomiques de Strasbourg – Observatoire de Strasbourg,
CNRS UMR 7550, Université de Strasbourg, 11 Rue de l'Université,
67000 Strasbourg, France*

*E-mail: katkov.ivan@gmail.com, chil@sai.msu.su,
sil@sai.msu.su, a.v.zasov@gmail.com*

We present the detailed study of the stellar and gaseous kinematics of the high luminous nearly face-on lenticular galaxy NGC 524 derived from long-slit spectroscopic observations obtained with the Russian 6-m telescope and the IFU data from the SAURON survey. The analysis of the stellar line-of-sight velocity distribution (LOSVD) has revealed the presence of a strong asymmetry, that led to non-physical values of the h3 and h4 parameters in the Gauss-Hermite parametrization. We developed a non-parametric recovery technique requiring no a priori knowledge of the LOSVD. We confirmed a strong asymmetry of the NGC 524 LOSVD using this technique. We propose a two-component model of spectra where different stellar population components are convolved with pure Gaussian LOSVD. This approach is based on the NBursts full spectral fitting technique. We discuss the origin of the complex stellar LOSVD and the gaseous kinematics of NGC 524.