

Panoramic Spectroscopy of Sy Galaxies with elongated radio structures

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Abstract. We have studied the ionized gas and stellar kinematics in several galaxies with active nuclei and elongated radio structures using 3D spectroscopy. The observations were performed at the SAO RAS 6-m telescope with the integral-field spectrograph MPFS (Afanasiev *et al.* 2001) and with a scanning Fabry-Perot interferometer (FPI) in the multimode device SCORPIO (Afanasiev & Moiseev 2005). Based on these data the intensity maps and velocity fields in the different emission lines of the ionizing gas were constructed. Using the lines-ratio diagrams we tried to search a source of the gas ionization: an active nucleus, hot young stars or shock waves.

Keywords. galaxies: Seyfert, galaxies: jets, galaxies: kinematics and dynamics

1. Mrk 334 (Sy1.8)

Velocity fields in the [OIII] λ 4959,5007Å emission lines shows a significant (150–200 km/s) ‘blue’ excess of the line-of-sight velocities in the galactic nucleus. This feature seems like an outflow from AGN caused by the circumnuclear radio structure (Kukula *et al.* 1995). The ionized gas velocities in the other emission lines show almost circular rotation. However, the maps of deviations from the circular model reveals large-scale non-circular motions near two bright emission-line condensations (we call it ‘knot A’ and ‘knot B’). The non-circular motions is about -50 km/s near the knot B and exceed +60 km/s between knots A and B. These peculiar streaming motions may be connect with the process of an interaction (merging) with a companion.

2. Mrk 1066 (Sy2)

The MPFS and FPI velocity fields in the different emission lines were analyzed by means the ‘tilted-rings’ methods. Most emission lines (except oxygen ones) exhibit a regular circular rotation. Line-of-sight velocities in the [OII] λ 3727Å and [OIII] λ 4959, 5007Å show significant deviations from the model of pure circular rotation. The main fraction of the [OIII] velocities are non-circular. This effect is a possible combination of two kinematically different subsystems: a normal rotation and an outflow caused by the radio jet intrusion in an ambient medium.

Acknowledgements

This work was supported by the RFBR grant 06-02-16825.

References

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