XIV Serbian Conference on Spectral Line Shapes in Astrophysics
Bajina Bašta, Serbia, June 19 - 23, 2023
Book of Abstracts, Eds. Luka Č. Popović, Nataša Bon, Edi Bon and Sylvie Sahal-Bréchot

OUTFLOW MORPHOLOGY IN THE ACTIVE GALACTIC NUCLEUS OF CIRCINUS GALAXY

S. Knežević[1], D. Kakkad[2], M. Stalevski[1,3], M. Kishimoto[4], D. Asmus[5,6] and F. P. A. Vogt[7]

[1]*Astronomical Observatory, Volgina 7, 11060 Belgrade, Serbia*
[2]*Space Telescope Science Institute, 3700 San Martin Drive, Baltimore, MD 21218, USA*
[3]*Sterrenkundig Observatorium, Universiteit Gent, Krijgslaan 281-S9, Gent, 9000, Belgium*
[4]*Department of Astrophysics & Atmospheric Sciences, Faculty of Science, Kyoto Sangyo University, Kamigamo-motoyama, Kita-ku, Kyoto 603-8555, Japan*
[5]*Department of Physics & Astronomy, University of Southampton, Southampton, SO17 1BJ, UK*
[6]*Gymnasium Schwarzenbek, 21493 Schwarzenbek, Germany*
[7]*Federal Office of Meteorology and Climatology - MeteoSwiss, Chemin de l'Aérologie 1, 1530 Payerne, Switzerland*

E-mail: sknezevic@aob.rs

We present VLT/MUSE narrow-field mode observations of the Circinus galaxy at a spatial resolution of $\sim 0.1''$ (physical scale of ~ 2 pc) that resolve the central region of the AGN. The observations reveal a collimated ionized gas outflow fragmented into two filaments forming a 'tuning-fork' shape. While the origin of the collimated outflow could be a result of jet-ISM interactions on small scales, the extinction map obtained from the outflowing components suggests that the dust clump at the tip of the collimated part of the outflow might explain its fragmentation. We estimated a total instantaneous mass outflow rate of 10^{-2} $M_\odot$ yr^{-1} and a time-average mass outflow rate of 10^{-4} $M_\odot$ yr^{-1}.