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Resolving spatially with the VLTI MATISSE the complex emission geometry of the micro-quasar SS433

Resolving spatially the complex emission geometry of the micro-quasar SS433 requires interferometric observations to be understood. SS433 is likely composed of a black hole accreting from a massive star. Multi-wavelength observations show an unresolved accretion disk, a more extended circumbinary outflow of variable geometry and the presence of cold dust.
The systems present two precessing relativistic jets. It has been spatially resolved with the VLTI, first with the GRAVITY instrument, and in a second step with MATISSE. The GRAVITY result has motivated further investigation of the variability as well as observations at larger wavelengths for the outer regions. With MATISSE, we provide the first measurements of the size of the continuum in the L and M band, and possibly estimate the dust temperature. With MR spectroscopy of the Br α line, we observe the outflows at the basis of the jets, providing additional constraints on the photoionization model of the jets. Two observations have been performed to sample the strong temporal variability of the different components.
We will present those observations through a poster and would like to take advantage of the conference to find collaborators to contribute interpreting those valuable data.

Contribution

Oral talk

Affiliation

Observatoire de la Côte d'Azur

E-mail

bruno.lopez@oca.eu

Author: Dr LOPEZ, Bruno (Observatoire de la Côte d'Azur, Nice)

Co-authors: MATTER, Alexis (OCA); Dr LAMBERTS, Astrid (OCA); Dr MILLOUR, Florentin (OCA); DANCHI, William (NASA)

Presenter: Dr LOPEZ, Bruno (Observatoire de la Côte d'Azur, Nice)

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