Contribution ID: **40** Type: **Flash-talk**

XMM–Newton, NICER and NuSTAR observations of the ultraluminous source NGC 4190 ULX-1

We report the results obtained from the analysis of XMM–Newton observations together with simultaneous NICER and NuSTAR observations of the ultraluminous X-ray source NGC 4190 ULX-1. Our goal is to constrain the structure of the accretion disk and the geometrical properties of the source, performing temporal and spectral analyses in the 0.4–30 keV energy range. The temporal analysis shows no flaring activity in the light curves. No pulsation is detected by any instrument. The source exhibits a characteristic ULX spectrum, which can be fitted with two thermal blackbody components plus a Comptonization tail at high energies. The luminosity-temperature relation of each thermal spectral component is consistent with the $L \propto T^2$ relation expected from an advection-dominated supercritical disk. We interpret these results as a super-Eddington accreting BH seen almost face-on where a dense wind ejected from the disk obscures the central source, and a hot electron plasma is evacuated through the funnel formed above the hole. Geometric beaming is responsible for the ULX soft emission, whereas the hard tail is the result of Comptonization of soft photons by the electrons ejected through the funnel. We were able to model the data assuming a black hole of 10 $M_\odot$ and an accretion rate of $\sim$ 10 $\dot{M}_{\rm Edd}$. The matter escaping from the funnel could form a synchrotron emitting jet potentially detectable with future high resolution radio observations. Detection of Balmer and He lines may provide more information about the wind, in particular its velocity.

Contribution

Flash talk

Affiliation

Instituto Argentino de Radioastronomia

E-mail

jorgearielcombi@gmail.com

Author: Dr COMBI, Jorge Ariel (Instituto Argentino de Radioastronomía (IAR))

Co-authors: Mr SAAVEDRA, Enzo (IAC); Dr FOGANTINI, Federico (Instituto Argentino de Radioastronomía (IAR)); Dr GARCIA, Federico (Instituto Argentino de Radioastronomía (IAR)); Dr ROMERO, Gustavo (Instituto Argentino de Radioastronomía (IAR)); Dr MARTI, Josep (UJA); Mr ABAROA, Leandro (Instituto Argentino de Radioastronomía (IAR)); Mr CRUZ-SANCHEZ, Nelson (Instituto Argentino de Radioastronomía (IAR)); Dr LUQUE-ESCAMILLA, Pedro (UJA)

Presenter: Dr COMBI, Jorge Ariel (Instituto Argentino de Radioastronomía (IAR))

Session Classification: Flash-talk

Track Classification: Flash-talk