



Library Indian Institute of Science Education and Research Mohali



DSpace@IISERMohali (/jspui/)

/ Publications of IISER Mohali (/jspui/handle/123456789/4)

/ Research Articles (/jspui/handle/123456789/9)

Please use this identifier to cite or link to this item: <http://hdl.handle.net/123456789/4698>

Title:	Spectro-timing analysis of a highly variable narrow-line Seyfert 1 galaxy NGC 4748 with AstroSat and XMM-Newton
Authors:	Singh, K P (/jspui/browse?type=author&value=Singh%2C+K+P)
Keywords:	galaxies: nuclei X-rays: galaxies galaxies: active
Issue Date:	2021
Publisher:	Springer Nature
Citation:	Journal of Astrophysics and Astronomy, 42(2).
Abstract:	We present a detailed timing and spectral study of an extremely variable narrow-line Seyfert 1 galaxy NGC 4748 using observations in the year 2017 and 2014 performed with AstroSat and XMM-Newton, respectively. Both observations show extremely variable soft and hard X-ray emission that are correlated with each other. In the 2014 data set, the source retains its general behaviour of “softer when brighter” while the 2017 observation exhibits a “harder when brighter” nature. Such changing behaviour is rare in AGNs and is usually observed in the black hole binary systems. The “harder when brighter” is confirmed with the anti-correlation between the photon index and the 0.3–10 keV power-law flux. This suggests a possible change in the accretion mode from standard to the advection-dominated flow. Additionally, both the observations show soft X-ray excess below 2 keV over the power-law continuum. This excess was fitted with a single or multiple blackbody component(s). The origin of soft excess during the 2017 observation is likely due to the cool Comptonization as the photon index changes with time. On the other hand, the broad iron line and delayed UV emission during the 2014 observation strongly suggest that X-ray illumination onto the accretion disk and reflection and reprocessing play a significant role in this AGN.
Description:	Only IISERM authors are available in the record
URI:	https://doi.org/10.1007/s12036-021-09719-1 (https://doi.org/10.1007/s12036-021-09719-1) http://hdl.handle.net/123456789/4698 (http://hdl.handle.net/123456789/4698)
Appears in Collections:	Research Articles (/jspui/handle/123456789/9)

Files in This Item:

File	Description	Size	Format
Need To Add...Full Text_PDF. (/jspui/bitstream/123456789/4698/1/Need%20To%20Add%e2%80%a6Full%20Text_PDF.)		15.36 kB	Unknown

[View/Open \(/jspui/\)](#)

[Show full item record \(/jspui/handle/123456789/4698?mode=full\)](#)

[Statistics \(/jspui/handle/123456789/4698/statistics\)](#)

Items in DSpace are protected by copyright, with all rights reserved, unless otherwise indicated.