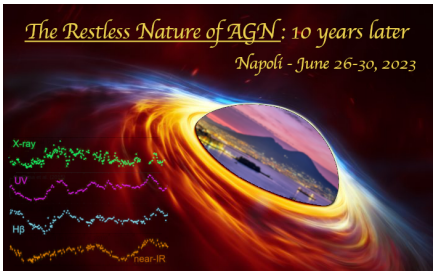

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The multifaceted variability of the Seyfert AGN MCG+08-11-11

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Over the last decade reverberation mapping (RM) campaigns of active galactic nuclei (AGN) have enabled us to probe their inner regions in unprecedented detail. Whilst observations have broadly confirmed that the short-term variability of the accretion disc is driven by variations in the X-ray corona a number of puzzles have also emerged, including: the contribution of the broad line region (BLR) to measured lags; the implied large disc sizes; the role of disc winds as obscurers or additional reprocessors; and unexpectedly long X-ray to UV lags.

To address these issues I present results from a superb new multi-wavelength data set on the bright Seyfert galaxy MCG+08−11−11. This major, high-cadence monitoring campaign, conducted with *Swift* and ground-based observatories, captured the source in an unusually highly-variable phase compared with previous observations: rapid, large-amplitude flux changes are observed at all wavelengths. We find that the X-ray and UV-optical lightcurves are much more highly-correlated than typically found in similar RM studies. The wavelength-dependent lags form a spectrum that approximates disc reprocessing predictions. The behaviour of the source was markedly different during an optical RM campaign conducted just a year prior in which only slow and moderate flux changes were seen; the resultant lag spectrum was very much steeper during this period, likely because of a stronger contribution from the BLR. Our new results further emphasise that a simple, static reprocessing geometry cannot explain the observed variability: even in the same source, different reverberating components (or processes) dominate at different times. This rich data set provides a golden opportunity to grapple with the dynamic and complex nature of AGN variability, and I discuss the broader implications.

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