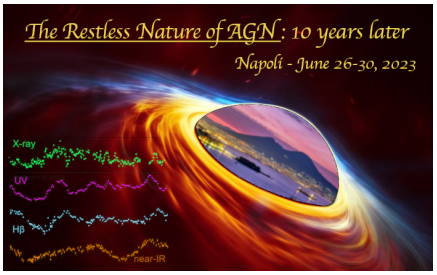

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Opportunities and challenges for spectral-timing models of AGN

Monday, 26 June 2023 16:15 (15)

X-ray reverberation mapping studies of AGN can, in principle, be used to measure the black hole mass and spin, the accretion disc and corona geometries, and the ionisation state of the disc. We report on our efforts to fit the spectra and time lags of a number of AGN, but focus primarily on two sources, 1H 0707-495 and IRAS 13224-3809. We can explain the low- and high-frequency lags, find that an extended corona is required, estimate the black hole masses, and find there are different correlations between parameters in each object as their coronae change. However, this model is slow to evaluate, the parameter space had to be limited (e.g., fixed spin; simplified geometry), it was difficult to characterise the error bars and degeneracies in the model, and the data were fairly noisy. We will discuss how new approaches to modelling and improved data will lead to a better understanding of the inner workings of AGN.

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