

The restless nature of AGN: 10 years later



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Inferring long-term variability on scales of 10^4 - 10^5 yrs using extended emission line regions

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We present the analysis of a five nearby AGN that present extended emission line regions (EELRs) observed with the VLT/MUSE spectrograph. Spatially resolved emission line diagnostics indicate that the EELRs have been primarily photo-ionized by their AGN. The stellar and gas component kinematics indicate past merger or galaxy interactions that have perturbed all of these sources. We generate sets of photo-ionization models and fit these to different regions along the different EELRs, covering distances of tens of kpc from the centre. These models allow us to estimate the bolometric luminosity required at different radii to excite the gas at the observed state. Our results suggests a systematic gradual decrease in AGN luminosity, and hence the accretion rate onto the SMBH, by a factor ~ 100 over the past $\sim 10^4$ yr for every galaxy in the sample. This allow us to probe AGN variability on scales larger than possible for human timescales.

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