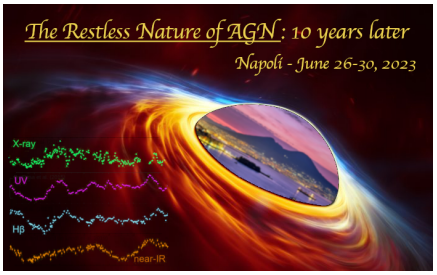

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Characterising the accuracy of time-scale recovery from gappy and noisy AGN light curves

The Atacama Cosmology Telescope (ACT) was a ground-based CMB experiment in the Atacama desert in Chile that observed the millimeter sky until 2022. Lightcurves have been obtained from flux measurements of point sources (AGN) in single-pass scans of ACT across the sky between 2013 and 2022. ACT currently has lightcurves for over 200 of its brightest point sources with measurements sampled on the order of a day, although these lightcurves contain gaps ranging from day to months due to details of instrument operation.

The aim of this project is to quantify how well the structure function (SF) from a "gappy" lightcurve replicates that from a full lightcurve, through the use of simulated lightcurves. This would allow us to quantify the level of uncertainty in the SF of our measured lightcurves. As different measured lightcurves have different samplings, an automated way to obtain these estimates is being developed. Here we present a preliminary study of any potential predictability in the deviations of the SF introduced by a specific sampling.

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