Abstract Submitted
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Models of accretion disk variability produced by flares MICHAEL MCLOUGHLIN[1], None — Accretion disks are central to many astrophysical phenomena including binary x-ray systems and active galactic nuclei. We employed Mathematica to generate artificial light curves for accretion disks. The basic parameters are accretion rate, central object mass and viewing angle. The model includes relativistic boosting from differential disk rotation. Variability in the flux expected to be generated by turbulence in the disk. We phenomenologically model this by randomly distributing artificial "flares" on the disk with intensities proportional to the local thermal flux and parameters describing the fraction of the disk surface covered by flares and their lifetimes. This technique reproduces the results of Mangalam & Wiita (1993) but extends their results by introducing temporal decays to the intensity of the artificial flares. The light curves generated by the simulation are used to produce power spectral densities (PDSs) that are then compared with PSDs taken from observations of real accretion disks. Good agreement is found for reasonable parameters.

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None

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