

The restless nature of AGN: 10 years later



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Review: AGN Selection and Characterization in Next-Generation Time-domain Surveys

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The emerging all-sky multi-epoch surveys (e.g., ZTF, Rubin LSST) have started a new era of time-domain astronomy. The variable nature of AGN across all wavelengths presents us with unique opportunities to probe AGN physics via time-domain analysis. I will start this talk by reviewing the time-domain analysis techniques, traditional and machine-learning based, currently employed in AGN selection and characterization. Then, I will present our most recent work on modeling $\sim 30,000$ quasar UV/optical light curves as second-order continuous-time autoregressive moving-average (CARMA) processes and introduce the new software package—EzTao—that we developed to conduct the modeling task. Lastly, I will preview our ongoing work to improve the current CARMA modeling technique and provide an outlook for further developments that will maximize the science output of next-generation time-domain surveys like the Rubin LSST.

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