

Abstract Submitted  
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**The Spectral Properties of Galaxies with H<sub>2</sub>O Maser Emission**<sup>1</sup> NATHAN DIDOMENICO, ANCA CONSTANTIN, JAMES CORCORAN, THOMAS REDPATH, James Madison University — Megamaser disk systems allow for accurate measurements of the masses of galactic supermassive black holes and precise distance determinations of extragalactic systems, but the detection rate of maser systems remains low. We investigate the optical spectral properties of a large, statistically significant sample of galaxies that host water masers in order to identify the host properties that correlate with maser emission, and thus provide efficient ways to search for new mega-maser disks. We combined spectroscopic observations from the Sloan Digital Sky Survey with the sample of galaxies surveyed for water maser emission from the Megamaser Cosmology Project. We identified 46 maser detections and 1207 non-detections in the SDSS spectroscopic sample of galaxies, for which we compared their black hole masses, optical spectral classifications via line ratio diagrams, extinction and reddening, electron density of the emitting gas, ages of the host stellar population and host stellar masses, emission line luminosities and the black hole accretion rates.

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