

# Miami Physics Conference 2022

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Title: Discovering binary black holes using VLBA observations

The supermassive black hole (SMBH) merger stage is the final stage in the evolution of galaxy mergers. The pre-final stage of mergers or black hole binaries is an ideal laboratory to study the dynamics of SMBH binary systems. Although several indirect tracers of SMBH binaries are reported in the literature, confirmation of their existence has proven to be challenging. Very Long Baseline Interferometry (VLBI) is a valuable technique for identifying SMBH binaries due to its high angular resolution, which helps zoom in on pc-scales at the center of galaxies. I will present results from our study aimed at discovering SMBH binaries using VLBA observations of a sample of X-shaped radio galaxies possessing double-peaked emission lines in their optical spectra.