
Searching for Dual AGN in Galaxies with Double-Peaked Emission Line Spectra using Radio Observations

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Abstract

Supermassive black hole (SMBH) binaries form due to galaxy mergers and minor accretion events. When the SMBHs are accreting, they form dual or binary AGN and can give rise to double-peaked emission lines in the optical spectra of the merger remnant. The double-peaked emission lines could also be due to jet-ISM interaction or rotating disks. One of the best ways to confirm dual/binary AGN in double-peaked AGN (DPAGN) is by using high-resolution radio observations. We have observed a sample of 20 DPAGN at two or more frequencies using the Karl G. Jansky Very Large Array (VLA). We have detected dual radio structures at separation of $< \sim 10$ kpc in three of our sample galaxies. Of the remaining sources, two have S-shaped core-jet structure and another source could be a core-jet structure or a DAGN. We find that for our dual AGN detection, the DPAGN emission lines do not originate from the dual/binary AGN. Instead, they could be due to outflows or jets.

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