

Abstract Submitted  
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**Exploring the jet launching region in active galactic nuclei using high-resolution VLBI** BINDU RANI, NASA GSFC — The high radio frequency polarization imaging of non-thermal emission from AGN is a direct way to probe the magnetic field strength and structure in the immediate vicinity of SMBHs and is crucial in testing the jet-launching scenario. To explore the the magnetic field configuration at the base of jets in blazars, I took advantage of the full polarization capabilities of the GMVA (Global Millimeter VLBI Array). With an angular resolution of 50 micro-arcseconds at 86 GHz, one could reach scales down to 900 Rs (for a  $10^9$  solar mass black hole). On sub-mas scales the core and central jet of BL Lac is polarized with the EVPA being aligned well with jet in the North-South jet direction. This suggests a well ordered magnetic field, with its main component being perpendicular to the jet axis. Such a field configuration is consistent with a helical magnetic field in the jet. In this talk, I will show the results of our study on BL Lac.

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