A 3mm Polarization Survey of Active Galactic Nuclei

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We describe the commissioning of and first results obtained with a versatile polarimeter operating at the intermediate frequency (150 MHz) of the IRAM 30m telescope. This versatile instrument allows continuum as well as spectral line observations in all millimeter atmospheric windows accessible with the 30m telescope.

After discussing the performance of the new polarimeter and its limitations, we present results from the first large scale polarization survey at 3mm wavelength, started in 1999. About 100 Active Galactic Nuclei with flux densities stronger than 0.8 Jy were observed, many of them repeatedly. Linear polarization larger than 10 percent is found in several sources at several epochs. Weak circular polarization is detected, probably for the first time at this wavelength in several sources. We see the clearest yet statistical evidence that the magnetic field is preferentially perpendicular to the jet axis in the subset of BL Lac objects.