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**A Study of the Hyperfine Structure of a 4.8 GHz Formaldehyde Maser in a Massive Star Forming Region** ARUP BARUA, ESTEBAN ARAYA, Western Illinois Univ — Spectral lines from molecular transitions exhibit hyperfine structure due to nuclear spins of the atoms in the molecule. Hyperfine structure has been detected in laboratory experiments as well as in spectral lines from molecular clouds in space. To investigate the hyperfine structure of a molecular transition, narrow spectral lines are required because the energy difference between hyperfine lines is typically very small. Masers are characterized by narrow spectral linewidths, thus, they can be used to investigate the hyperfine structure of molecular transitions in space. We present a study of the 6 cm formaldehyde maser in the G32.74-0.07 star forming region. Analysis of the spectral line indicates that the maser is unsaturated and predicts a background radio continuum level of the order of 1 mJy. VLA continuum observations show that the maser is indeed coincident with a weak radio continuum source, which supports the unsaturated maser model.

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