

HI Column Density and Magnetic Field in our Galaxy

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In order to find the evidence for the relationship of the Galactic magnetic field strength and the gas density, we used the synchrotron continuum emission data at 408 MHz and HI column density in this paper. In some selected regions near the galactic plane a clear linear correlation of $T_b(408) = A(l,b) + B N_{HI}$ has been found. We conclude that the magnetic field strength is clearly correlated with HI cloud in our Milky way, and will discuss our results in context of predictions for a such relationship by other authors.