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**Magnetic Field in The Isolated Massive Dense Clump IRAS 20126+4104
– A Study Across A High Spatial Dynamic Range; From 1 Parsec Scale
Down To 20 AU Scale**

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We report on a study of the magnetic field structures of IRAS 20126+4104, a massive dense clump in which the rotation axis and the magnetic field axis are misaligned. In order to study the role of magnetic field in high mass star formation in detail, we investigate magnetic field of the object in a high spatial dynamic range. The data sets that we use include interferometric data taken with the Submillimeter Array (SMA) and single-dish data with 9 arcsec beam taken with the SHARP/CSO (Shinnaga et al. 2012) and with 15 arcsec beam taken with SCUPOL at the JCMT telescope (Matthews et al. 2009). Comparing the above results with the VLBI spectropolarimetric observations by Surcis et al. 2014, these four independent data sets allow us to investigate the magnetic field structures across a very high spatial dynamic range (5×10^3), between 1 pc scale and down to 20 AU scale of the massive dense clump – massive ($\sim 10M_{\text{sun}}$) (proto)star system. By comparing the observational results with theoretical simulations, we find that the magnetic field plays a critical role on the formation of a massive (proto)star during the course of the gravitational collapse of the massive dense clump.