

Developments in Modeling the Galactic Magnetic Field

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We present an improved 3D model of the strength and structure of the Galactic random field. The analysis uses the synchrotron intensity as measured by Planck, WMAP and Haslam et al. and the observed fluctuations of the rotation measures of extragalactic radio sources. As part of this modeling effort, we improve the separation of the various components of Galactic emission, the determination of the 3D cosmic ray electron density and spectrum, and the thermal electron distribution. This combined information allows us to constrain both the strength and coherence length of the random field. We also report developments in modeling the large scale coherent field of the Galaxy.

*36th International Cosmic Ray Conference -ICRC2019-
July 24th - August 1st, 2019
Madison, WI, U.S.A.*

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[†]A footnote may follow.

This contribution for the Proceedings will be completed after the presentation. For related earlier work see [1, 2, 3, 4, 5, 6, 7, 8].

References

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