

Abstract Submitted  
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**The Galactic Magnetic Field as a Parker Spiral - A New View of the Milky Way** ANNA ORDOG, JO-ANNE BROWN, University of Calgary, TOM LANDECKER, ROLAND KOTHES, Dominion Radio Astrophysical Observatory — The Galactic Magnetic Field (GMF) has been determined to be an important component of the interstellar medium, contributing to processes such as star formation and cosmic ray acceleration, in addition to providing vertical pressure balance to counteract gravitational collapse of the Galaxy. The large-scale GMF is typically modeled as resulting from a dynamo that amplified and ordered a weak seed field present at the time of Galactic formation. The dynamo equation solutions describe various symmetries for the present-day field structure, and there have been extensive studies to determine which symmetries or combinations thereof yield the best fit to the data. However, no single model successfully describes all features of the GMF. We present preliminary results of a model for the GMF similar to the Parker spiral solar model. This idea was first proposed in 1982 but was rejected shortly thereafter on the grounds of incompatibility with observations available at the time. We show that a diagonal gradient observed in the Rotation Measures of the diffuse Galactic synchrotron emission from the Canadian Galactic Plane Survey lends credibility to the Galactic Parker spiral model. We demonstrate how this may resolve some inconsistencies between the observations and other existing models.

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