

PEM034-05

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太陽磁場南北半球対称性の乱流拡散に対する依存性

Dependence of solar global magnetic parity on turbulent diffusivity

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The dependence of the solar magnetic parity between the hemispheres on the some parameters, the turbulent diffusivity and the meridional flow is investigated. It is known that the solar global magnetic field is a dipole, i.e., antisymmetric about the equator. The dipole field, however, is not inherent in the solar flux transport dynamo model. It is known that the coupling of the magnetic field between hemispheres with the turbulent diffusivity is the important factor for the solar parity issue but the detailed criterion for the dipole field have not been investigated. In this study, we do the parameter study with the axisymmetric kinematic dynamo simulation. Our conclusions are as follows. (1) The stronger diffusivity near the surface is more liable to lead the magnetic field to be a dipole. (2) The thinner layer of the strong diffusivity near the surface is more apt to lead the magnetic field to be a dipole. (3) The faster meridional flow is more prone to lead the magnetic field to be a quadrupole, i.e., symmetric about the equator.

キーワード: 太陽, ダイナモ, 太陽活動周期

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