44th COSPAR Scientific Assembly 2022

Research in Astrophysics from Space (E)
Solar and Stellar Magnetic Flux Ropes (E2.1)

ESTIMATES OF THE SOLAR MAGNETIC FIELD IN REGION AR11967 USING INVERSION METHODS

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Determine the magnetic field in the solar photosphere of the active region AR11967 using Stokes parameters and using tools such as Inverse Problem Theory and Spectropolarimetry. In addition, we present the Radiative Transfer Equation (RTE) and obtain its solutions (Stokes spectra) to obtain diagnoses of the active region studied. We chose data from the Hinode mission on AR11967 on Feb 4, 2014. We chose the spectral line F_e I to study the properties and behaviors of the active region studied, which is AR11967. For this, we studied and modified methods and inversion codes and compared what was obtained with the results of the MERLIN inversion code of SP from the Hinode mission. In addition, a Milne-Eddington atmospheric model was adopted. With the inversion code in hand, it was possible to compare with the SP/Hinode results where the maps obtained will be subtracted from the SP/Hinode maps.