

How much do we know about the polar field?

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The importance of Sun's polar field has been widely discussed on various fronts. For example, the polar field can affect the modeling of the source region of the solar wind and possibly explain the discrepancy of the estimated and observed open magnetic flux in the heliosphere. It is extremely difficult to measure the polar field from the ecliptic plane. Hinode SOT observations, however, have revealed the patches of enhanced magnetic field in the polar regions. In recent years, almost the same features have been identified in vector magnetograms from SDO/HMI. In this study, we compare the magnetic fluxes contained in the patches commonly observed by SOT/SP and HMI, and discuss the possible range of the average radial field in the polar regions over a solar cycle.