

Magnetic field measurements at different levels in the solar atmosphere and magnetic coupling

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The magnetic field couples the different layers of the solar atmosphere with each other. To unravel this coupling we need to be able to measure the field at all the relevant levels. Most measurements of the magnetic field refer to the photosphere, where magnetographs and spectropolarimetry using the Zeeman effect have allowed the magnetic structure and its evolution to be studied. Observations of the field at higher layers in the atmosphere are more rare, although a number of techniques are available. These include Zeeman-effect and Hanle effect based measurements in the chromosphere and the corona, as well as radio observations of coronal magnetic field. These direct measurements are complemented by magnetic field extrapolations starting from the photosphere. A brief overview of results obtained by various techniques of magnetic field measurements is given and a more detailed discussion of the main results of recent measurements of the field in the photosphere and the upper chromosphere are presented.