



Global coronal magnetic field modelling for Solar Orbiter

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Modelling the solar coronal magnetic field in 3D is an interesting research topic on its own right. But field models are also important for combining the analysis of data from remote sensing and in-situ instrument on Solar Orbiter by providing the magnetic connectivity. A well tested and frequently applied method is to use photospheric field measurements, e.g. synoptic vector magnetograms from SDO/HMI, and extrapolate them into the solar corona under the assumption that the field is force-free. We do this by a nonlinear force-free code, based on minimizing a functional. The method is very flexible and allows to incorporate loop shapes from coronal images. Ongoing projects are to go beyond the force-free approximation, which is necessary in the outer solar corona beyond the source surface. A first step are magneto-static extrapolations (including plasma pressure gradient and gravity force). In a second step we compute stationary MHD-equilibria which additionally consider the solar wind flow.