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Recent progress on developments of the magnetohydrostatic extrapolation

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The magnetohydrostatic (MHS) extrapolation is developed to model the three-dimensional magnetic fields and plasma of the solar atmosphere with the measured vector magnetogram used as boundary condition. It differs from the nonlinear force-free field (NLFFF) extrapolation in that it takes into account plasma forces include pressure gradient and gravity. In this presentation, I will report the recent progress in two aspects on developments of the MHS extrapolation. The first one is the development of a preprocessing method to deal with the non-MHS vector magnetograms. The reason of doing this is that there are a small number of the vector magnetograms which are not consistent with the MHS equilibria. The second aspect is the combination of the MHS extrapolation and the NLFFF extrapolation to improve the efficiency of the computation.