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Quality assessment for objective inter-comparison of coronal models

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With the increasing amount of space weather forecasting simulation codes being developed, assessing their performance becomes crucial. Especially the errors resulting from coronal magnetic field models are a critical factor, because these will get propagated further by various solar wind models. We present a first result for a benchmarking system that allows a rather easy-to-implement assessment of the performance quality of any coronal magnetic field model. This will allow for a standardized comparison between different models. The benchmarking system is based on stepwise visual and semi-automatized comparisons between model output and EUV on-disk and coronagraph white-light data. We are using various viewpoints and instrumental data provided by STEREO, SOHO and SDO.

In our work we exemplarily apply this scheme to the coronal model currently implemented in EUHFORIA, an adaption of the Wang-Sheeley-Arge (WSA) model, with varying input parameters. Furthermore, with this system we also show its possible usage for the derivation of an ideal parameter set.