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3D forecast of major geomagnetic storms

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A 3D analysis of coronal mass ejection events leading to major geomagnetic storms in solar cycle 24 has been carried out with help of STEREO and SOHO multipoint observations. The results from the CME modeling through application of the GCS and CAT methods were used as inner boundary conditions for the ENLIL simulations. Comparison of multipoint in situ CME measurements with the ENLIL results provides information on the 3D accuracy of the space weather forecasts and implications for future mission plannings near L5 or sub L1 orbits.