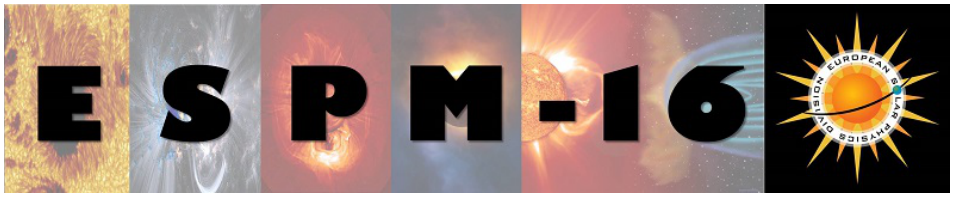

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A simulation of a coupled pseudostreamer/helmet streamer eruption

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An important aspect in the early evolution of a coronal mass ejection (CME) is its interaction with the magnetic field in the low corona on its way to the heliosphere. This interaction can influence the trajectory and morphology of the eruption, so a better understanding of this field/eruption coupling could lead to better constraints on the inputs into Space Weather forecasting models. Here we report on a simulation of a CME with a complex evolution in the low corona. The CME originates from the eruption of a filament channel formed beneath a pseudostreamer. The eruption interacts with both the pseudostreamer and an adjacent helmet streamer producing a coupled eruption involving both structures. As a result, the CME produced is strongly deflected and contains a mixture of open and closed magnetic flux. Our simulation covers the full length of the eruption process, from formation of the filament channel to propagation of the CME out to 30 solar radii, allowing an in-depth look at the how the CME forms and evolves. This work demonstrates the importance of the global coronal magnetic field in the formation process of some CMEs.

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