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First results on production of magnetosheath jets during to SIRs and CMEs

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Coronal mass ejections (CMEs) and stream interaction regions (SIRs) are different large-scale structures in the solar wind. When interacting with Earth, they may cause the most severe Space Weather effects. Between solar wind and Earth's magnetosphere also other possible geoeffective phenomena are generated, namely "magnetosheath jets". They are defined mainly as dynamic pressure enhancements and constitute a significant coupling effect between the solar wind and the magnetosphere of the Earth. How they are related to CMEs and SIRs is so far not explored. To shed light on this relation and on the generation of these jets in general, we present the first-ever statistical results of the jet production during CMEs and SIR times by using THEMIS data. We find that the number and total time of observed jets decrease while CMEs hit the Earth's magnetic field. On the other hand, the number of jets increases during SIR phases. We discuss possible physical processes to explain these statistical differences.

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