



## **Response of the M-I current system for two successive interplanetary shocks during the southward and northward IMF conditions**

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When strong interplanetary shock interacts with the magnetosphere, the behavior of the current system is changed in magnetosphere and ionosphere. In this study, the dual SIs were triggered by the compressional region of two successive solar flares on August 1-3, 2010. They were corresponding to the interplanetary source between the two CMEs with outstanding high density impulse. One SI occurred during the northward IMF, while fifteen minutes later the other SI took place under southward IMF conditions. By using ground- and space-based measurements from 145 global observatories and multiple satellites, respectively, we compared the global current distribution of the double SIs on the ground, in the Earth's synchronous orbit and inner plasmasphere, and discussed the variations of magnetosphere-ionosphere current system associated with the two kinds of SIs.