

**M28a Data-driven MHD simulation of minifilament eruption**

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Solar flares and plasma ejections are caused by release of magnetic energy stored in the solar plasma atmosphere. Many physical processes are incorporated in an explosive event, e.g., energy build-up, onset of energy release (reconnection and MHD instabilities), and propagation of ejecta interacting with the ambient coronal magnetic fields. To understand the physical mechanisms, and to perform prediction of a particular event, we need information of three-dimensional magnetic fields from the photosphere to the corona. The photospheric magnetic fields are observable, while the coronal magnetic fields are not observable. One method to infer coronal magnetic fields is data-driven MHD simulation in which time series observational data of photospheric magnetic fields are used as the bottom boundary condition of time-dependent MHD simulations. We developed a new method of data-driven simulation in which physical consistency among velocity fields, electric fields, and the observed magnetic fields is improved compared to the previous data-driven methods. We applied our method to reproduce a minifilament eruption on 5. Nov. 2017 observed by SMART at Hida Observatory. We carried out data-driven zero-beta MHD simulations using the photospheric vector magnetic fields observed by SDO/HMI. As a result, helical flux rope was formed and erupted by reconnection between opposite polarity magnetic patches in the photosphere. The onset time of eruption in our simulation was approximately 30-50 minutes behind the observed onset time. The speed and direction of the eruption were consistent with the observation.