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The MUSE mission and the modeling of reconnection events

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The MUSE NASA mission, with significant ASI-INAF contribution, will use EUV spectroscopy in 3 single-line bands to probe basic magnetic and heating processes in the solar corona. The lines are sensitive to plasma emission at about 1, 2.5 and >8 MK and can therefore track the evolution of plasma when it is heated up and then cools down. Resolving the lines will allow to obtain information about non-thermal processes and plasma dynamics, and the 35 slits will allow to have this information at good time and space resolution. It will be possible to have reconnection processes at the origin of space-weather confined and eruptive events as a direct target.

Even with this innovative design it is well known that the complex plasma physics make it very difficult to address reconnection processes directly, and therefore the use of MHD modeling becomes fundamental. We discuss state-of-art forward modeling of coronal loop stressing and interaction for comparison with observations.

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