



Case study of July 2017 CMEs using modelling and multi-spacecraft observational approach

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We present the analysis of several CMEs that erupted mid-July 2017 from the same source region on the back side of the Sun as viewed from Earth. In our analysis, we use multi-instrument and multi-spacecraft measurements as well as different modeling approaches. We perform a 3D reconstruction of each CME, to find their respective directions, geometry and kinematics. We employ WSA/ENLIL simulations and DBM propagation model to better understand their interplanetary evolution and associate them to signatures observed at STEREO-A and Mars. At Mars, a two-step Forbush decrease is observed with MSL/RAD July 24 2017. With the amplitude of more than 15% this is one of the largest Forbush decreases detected at Mars. At STEREO-A in situ ICME signatures are observed July 24/25 2017. This ICME shows a remarkably high magnetic field strength of 60 nT, probably related to the inability to expand due to interaction. This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 745782.