



Multi-spacecraft STEREO observations of magnetic clouds

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In addition to 3D imaging capabilities, the two STEREO spacecraft also provide unprecedented in-situ observations of the local solar wind plasma and magnetic field at 1 AU at increasing longitudinal separation from Earth. This presents a very good opportunity to model interplanetary coronal mass ejections with a clearly rotating magnetic field (magnetic clouds) using more than one spacecraft to probe their full spatial extent and flux content. This is important not only for space weather prediction purposes but also for understanding CME initiation processes. To this end, we employ the Grad-Shafranov reconstruction technique suitably extended for the use of multi-spacecraft data. We present a summary of results on some magnetic clouds seen by STEREO and WIND where this approach was feasible. Furthermore, we search for the solar sources of these events and, wherever possible, also discuss comparisons with CME triangulation techniques.