

Supplementary material for JGR paper by Vernisse et al. “Latitudinal dependence of the Kelvin-Helmholtz instability and beta dependence of vortex-induced high-guide field magnetic reconnection”

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We provide supplementary material detailing all results for each current sheet that we have analyzed. The material is provided in a separate table file. We provide here a brief description of the data, which are provided as raw single precision numbers. Any scientific use of these numbers should refer to the original precision of the instruments and the raw data, available at <https://lasp.colorado.edu/mms/sdc/public/about/browse-wrapper/>

- The first column “Start time” provides the start time of each current sheet.
- The second column “Stop time” provides the end time of each current sheet.
- The third column “Parallel ebl stop time” provides the end time of any electron boundary layer, if observed. If no parallel electron boundary layer is observed after the current sheet traversal (we recall that we analyzed only the current sheet traversals where the spacecraft crosses from the magnetosphere to the magnetosheath), the table is filled with a “False” statement. If an electron boundary layer is observed all along the traversal of the spacecraft through the magnetosheath, the event is annotated as ‘long’.
- The fourth column (“Anti-parallel ebl stop time”) is the same as the third one, but for anti-parallel electron boundary layer observations.
- The fifth column (“Angle between the Current sheet normal and unperturbed magnetopause”) provides the angle between the normal to the current sheet we have derived using the MVA method (as detailed in the main paper) and the normal of the unperturbed magnetopause as derived using a Shue et al. (1997) model. The value is provided in degrees.

- The sixth column (“Current sheet width in ion inertial lengths”) gives the width of each current derived using the bulk ion velocity projected onto the normal to the current sheet. The value is provided in ion inertial lengths.
- The seventh column (“Ion inertial length”) provides the average inertial length in kilometer for each current sheet.