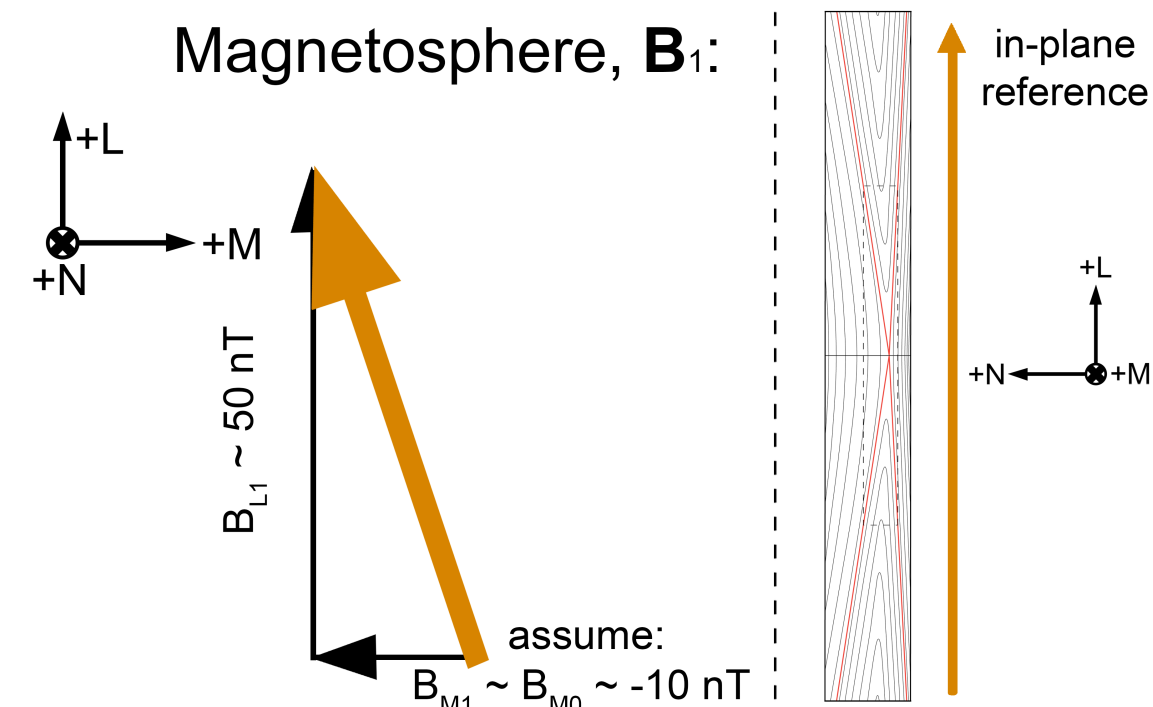
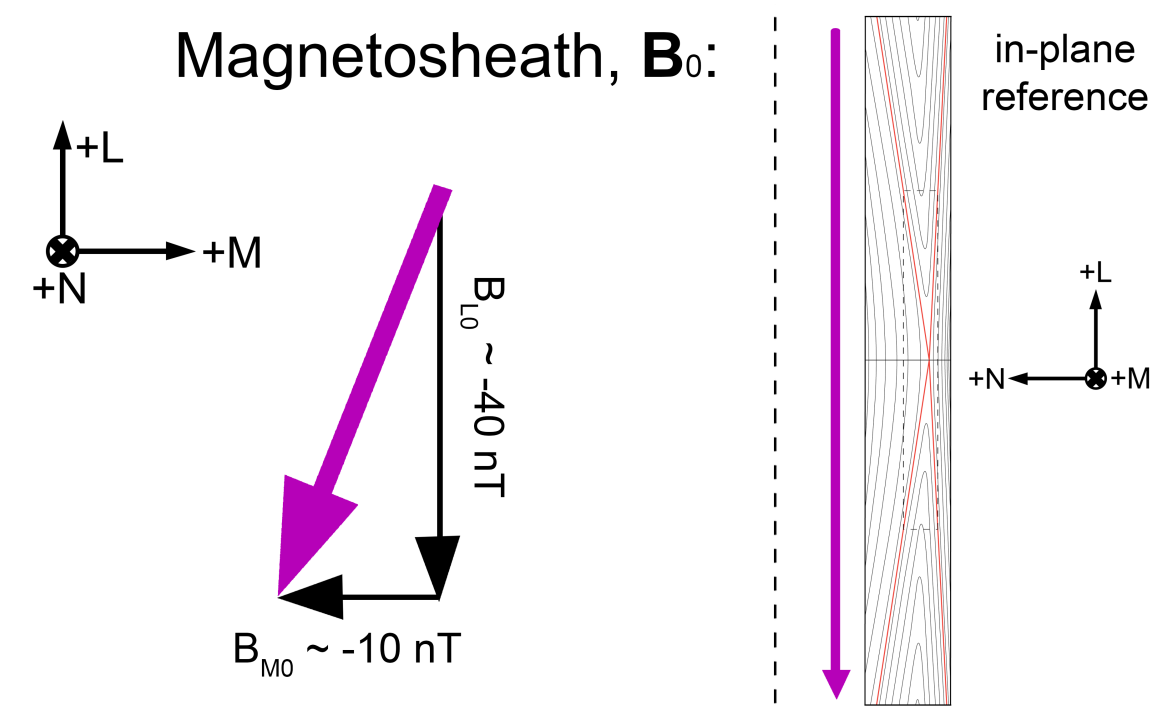


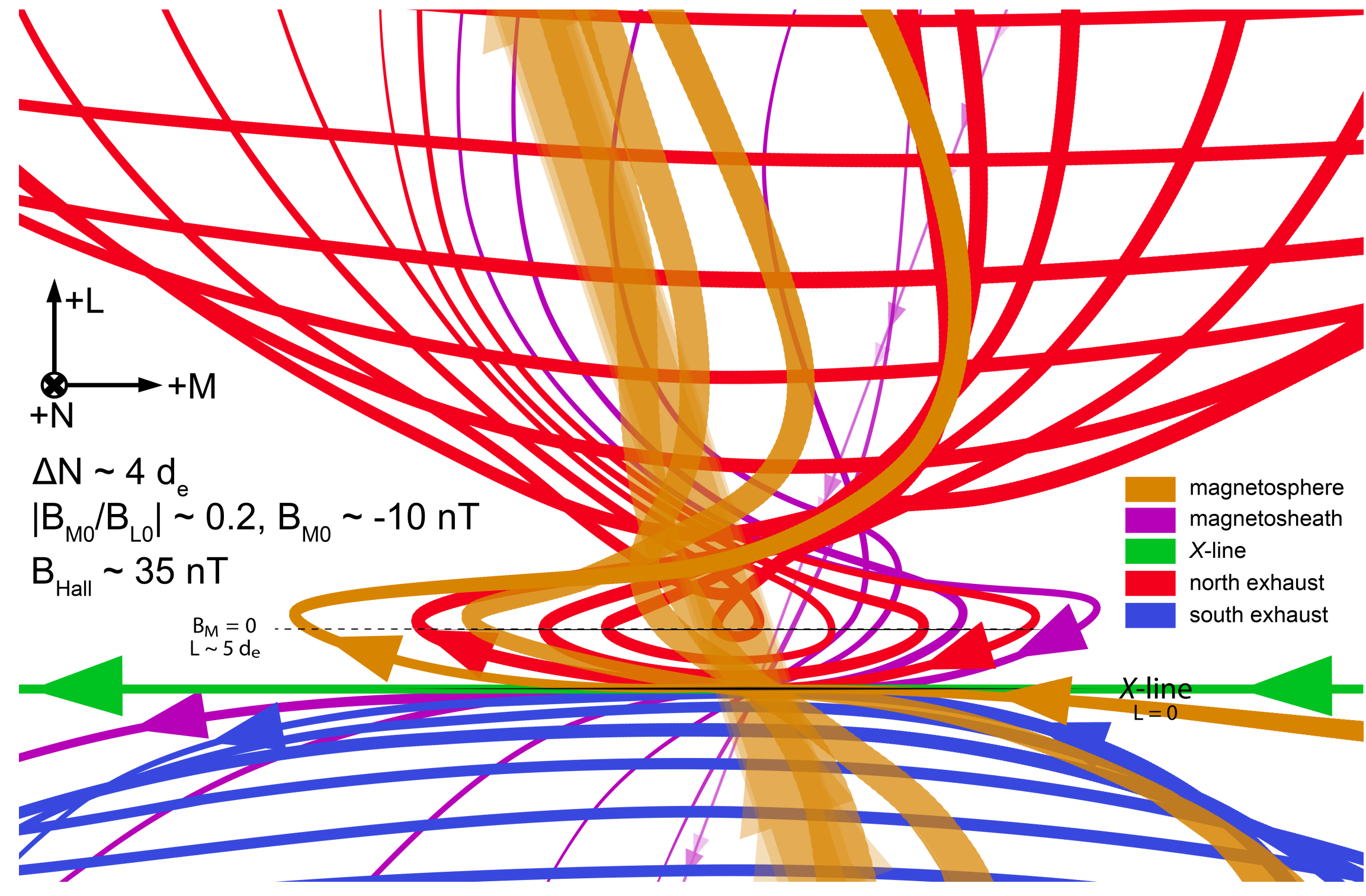
Out-of-Plane Reconnection Magnetic Field Topology at the Electron Scale

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Methodology:

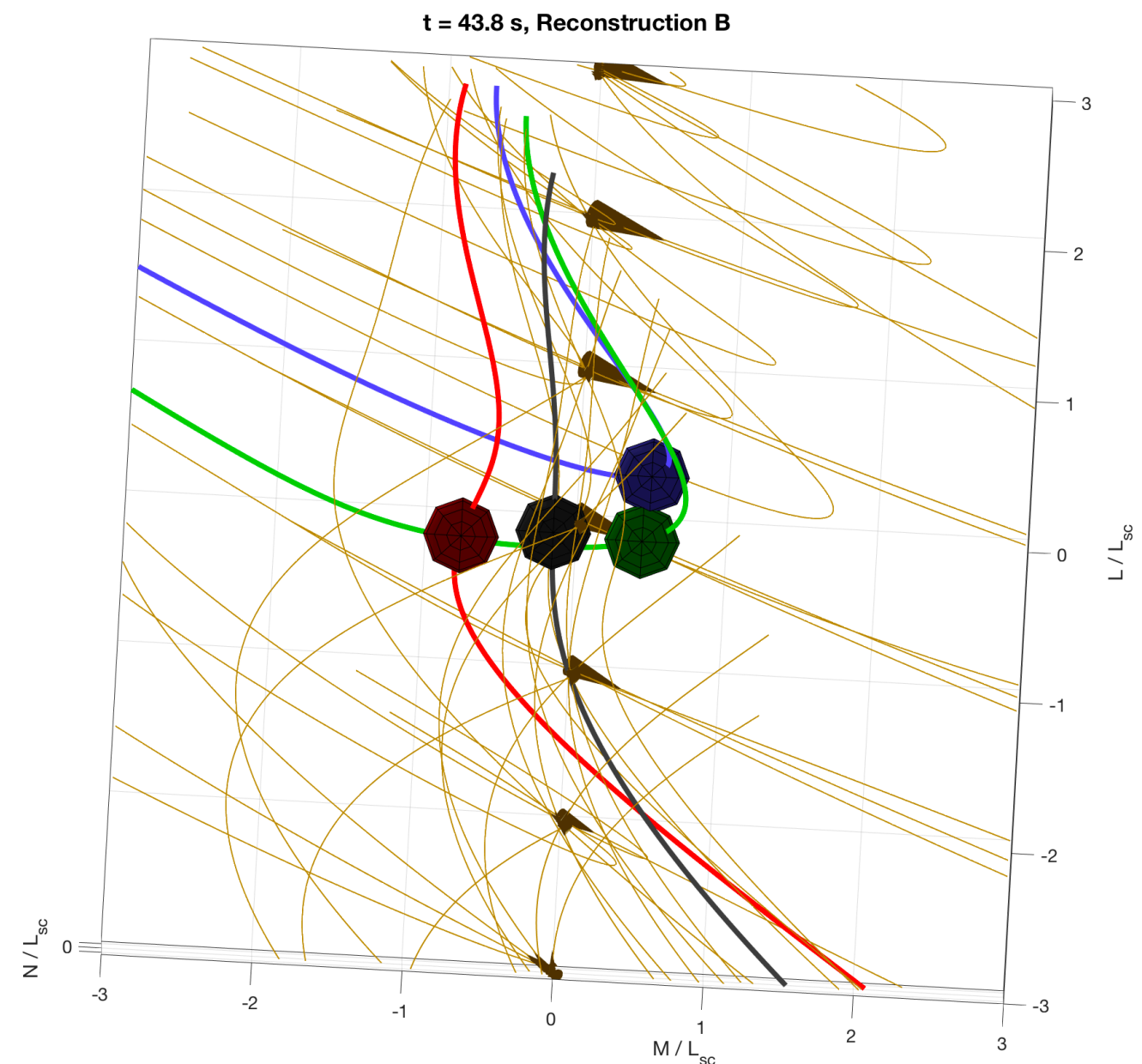


Result:

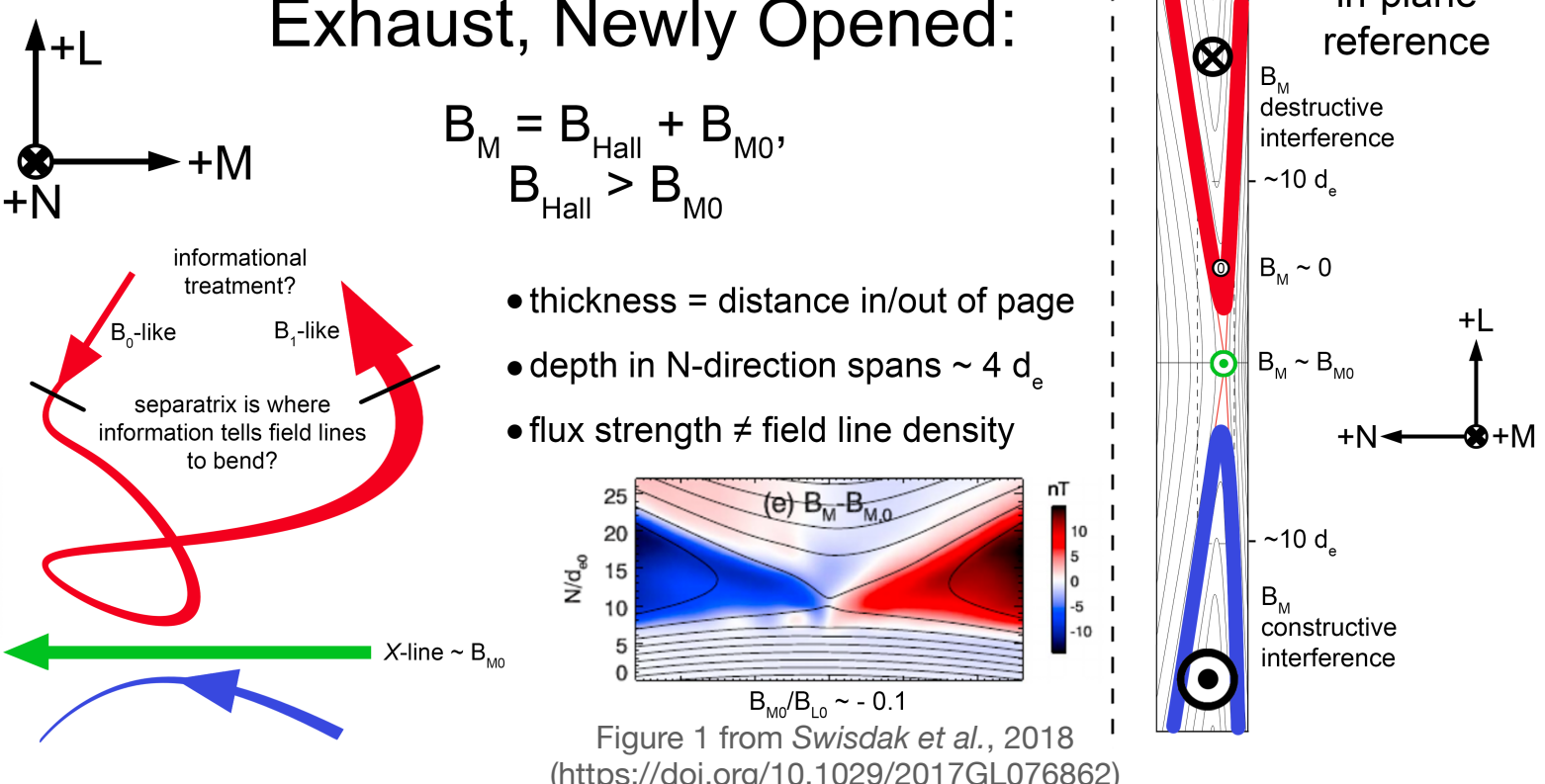


Reconstruction:

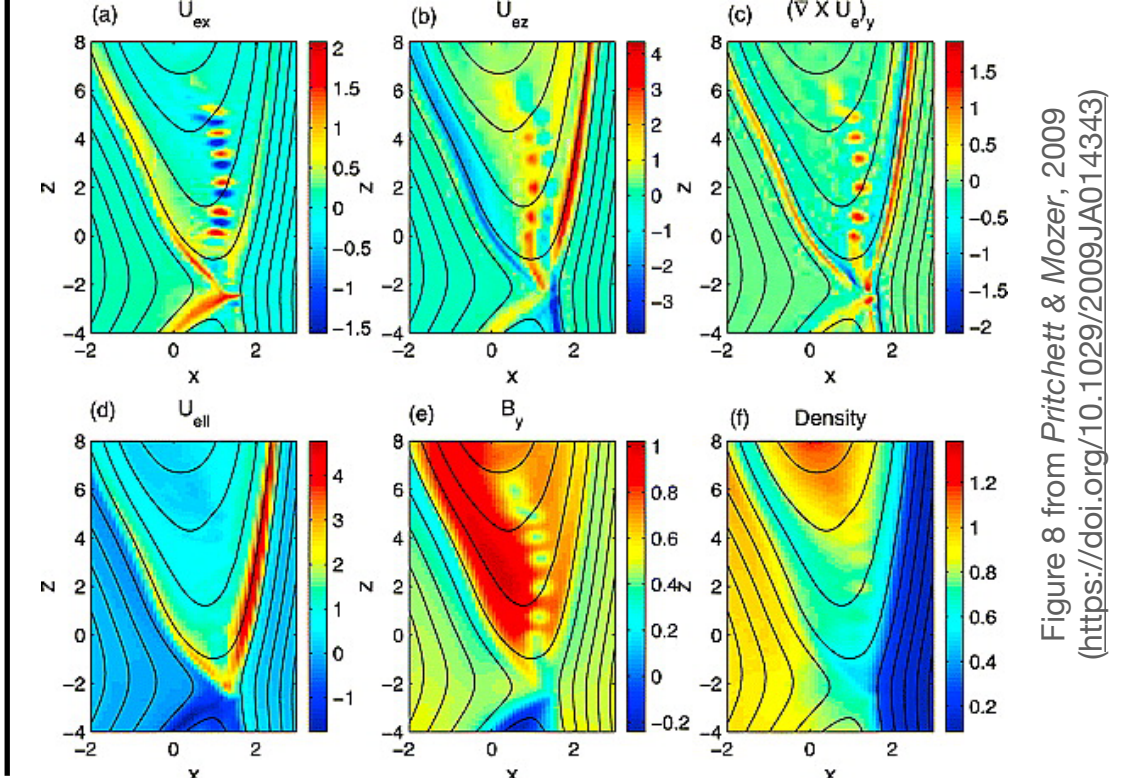
(different upstream conditions)



Exhaust, Newly Opened:



Simulation: ($B_{M0}/B_{L0} \sim +0.5$)



Discussion:

- As field lines convect through the EDR, the interplay of the guide and Hall magnetic fields produces an interesting topology.
- In both new and previous PIC simulations, electron vortices form inside the exhaust on the side of constructive interference of B_M .
- The vortices must be related to an instability associated with the topology, although they form on the less kinked side of the X-line.
- The parameter spaces of B_{M0} , B_{Hall} , and degree of asymmetry will create distinct families of topological types.
- New out-of-plane visualization tools may be required for PIC confirmation.
- Consideration of where newly-adjointed field lines previously mapped to in the out-of-plane direction may help understand X-line spreading and reconnection evolution.