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# Universal scaling of thin current sheets in space plasma

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Thin current sheets (TCSs) with thicknesses about ion Larmor radii can play the key role in space; particularly they can store and then explosively release the accumulated free energy. The dynamics of ions moving along quasi-adiabatic trajectories in TCSs is different from one of magnetized electrons following guiding center drift orbits. Due to this property TCSs can be described in a frame of a hybrid approach. The thickness of the super-thin embedded electron sheet remains uncertain because of the scale-free character of magnetized electron motion. We propose a new analytical approach to describe the multilayer TCS and provide the universal expression describing the embedded electron sheet as a function of the cross-sheet transversal coordinate z characterizing TCS. We demonstrated that the unique property of the electron sheet is the nonlinear character of magnetic field profile: $B(z) \sim z^{1/3}$ which conforms excellently with MAVEN observations in the Martian magnetotail.

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