



## **Electron scale physics in magnetic reconnection**

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Magnetic reconnection involves, for each particle species, a diffusion region, within which charged particles become unmagnetized and diffuse across the magnetic field. Naturally, electrons tend to remain magnetized even if ion species already lose their tie to individual flux tubes. It is therefore of great interest to investigate electron behavior in magnetic reconnection. This talk will focus first on the mechanism, by which electrons provide the resistive force to balance the acceleration of the reconnection electric field. We will identify the underlying mechanism by means of investigating the electron distribution function. We will then use theoretical analyses to develop a universal equation, which captures apparent electron behavior and predicts the magnitude of the reconnection electric field.