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Conditions for Fast Reconnection and Its Large-Scale Structure

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In this talk, we address two fundamental questions regarding the process of magnetic reconnection. We will address the conditions and controlling parameters that determine the rate of reconnection. The second question concerns the large-scale structure of reconnection exhaust. We will compare and contrast the results with the standard resistive MHD solutions such as Sweet-Parker, Petschek, and flux pileup reconnection. The implications of the results for understanding of reconnection in the magnetosphere, solar wind and in the sun will be discussed.