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Prospects for Turbulent Reconnection in Solar Flares TERRY FORBES, University of New Hampshire — High-resolution images of solar flares often show features that are consistent with reconnection plasma flows into and out of a large scale current sheet. The flows into the sheet range from a few km/s up to 50 km/s, corresponding to inflow Alfvén Mach numbers in the range from 0.001 to 0.05. The flows out of the sheet have been observed to exceed 600 km/s, but maybe even faster since existing instruments do not have sufficient time resolution to observe flows in excess of this speed. The outflowing plasma typically exhibits fluctuations that are suggestive of turbulence, and similar fluctuations sometimes occur in flare simulations if the magnetic Reynolds number is sufficiently large. Whether the observed or simulated fluctuations are consistent with turbulence is yet to be established. If they are, then an important question that needs to be addressed is the source of the turbulence. One possibility is that the turbulence is generated internally within the current sheet, but another possibility is that it is generated externally. In the latter case the observed fluctuations could result simply from the relative amplification that occurs when low level fluctuations are convected into the weak field region of the current sheet.

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