# New opportunities and insights on magnetic reconnection in turbulent plasmas

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Magnetic reconnection is ubiquitous in space and laboratory plasmas. In many settings, these plasmas are turbulent. Understanding the fundamental properties of reconnection in turbulence is an important endeavor in plasma physics. The magnetic flux transport (MFT) method is an innovative method to identify reconnection in simulations and observations of turbulent plasmas independent of complex plasmas flows. We will review the fundamentals of this method, new opportunities it presents, and new insights gained from recent applications in kinetic plasmas. Particularly, in three-dimensional kinetic turbulence, MFT provides first evidence for highly extended reconnection X-lines, which is strikingly similar to those in laminar reconnection. Reconnection starts in localized regions, and spreads bidirectionally at the Alfven speed to form extended X-lines. The time scales of reconnection X-lines parallel and perpendicular to the background magnetic field are inherently related, by the same relation that governs turbulent fluctuations, which underlies the interplay of reconnection and turbulent dynamics. We will highlight the latest development of the MFT method, including a new capability to identify electron-only reconnection independent of electron outflows and an automated identification procedure.