Instability of the Sweet Parker reconnection layer and onset of fast turbulent reconnection MARINA SKENDER, GIOVANNI LAPENTA, KU Leuven — Within purely resistive MHD without any anomalous effects reconnection sets into a steady state kink to center around an elongated current sheet, the Sweet-Parker (SP) layer, where dissipations allow reconnection. However, such layer is known to be possibly unstable to tearing-like modes. A recent discovery [1,2] is that following the destabilisation of the SP layer reconnection can develop into a fast turbulent regime. This new regime requires no anomalous processes and it is purely resistive MHD, progressing as fast as the fastest kinetic or MHD processes. We investigate such transition.