Linear and nonlinear dynamics of double tearing mode instability in the presence of shear flows

Direct nonlinear interaction between the DTM and the KHI around current sheets is simulated based on reduced MHD model using an initial value code.

Phase I: linear growth of the high m (=4) KH instability
Phase II: KH instability saturation
Phase III: New instability of the m=1 mode
Phase IV: Rutherford-type phase
Phase V: globally reconnected phase

Future work:
- A precise identification of the characteristics the m=1 mode in Phase III will be considered.
- The global reconnection associated with explosive growth of the DTM will be studied.