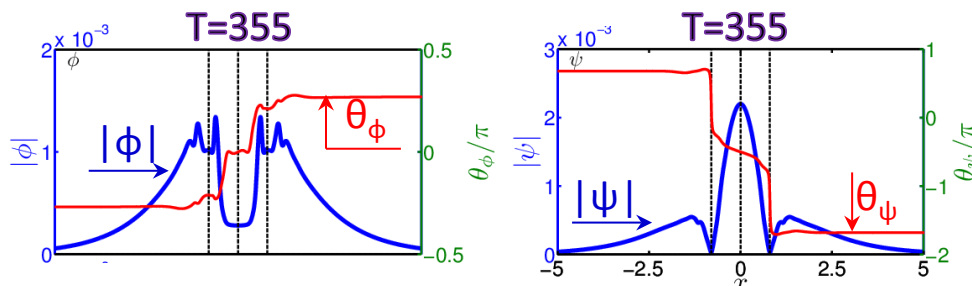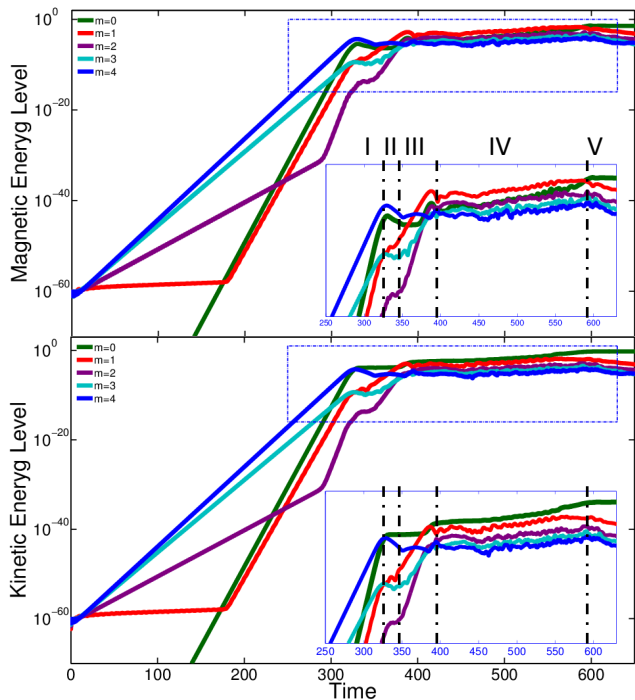# Linear and nonlinear dynamics of double tearing mode instability in the presence of shear flows
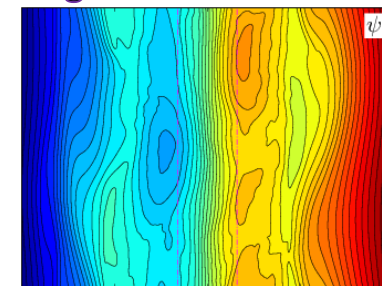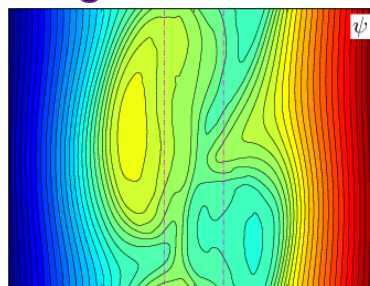
Mao Aohua

❉ 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

T=550
(before global reconnection)

T=610
(after global reconnection)

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.