

Extension of numerical matching method to weakly nonlinear regime — beyond the Rutherford theory of magnetic island evolution

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- ▶ We have extended the **numerical matching method using a finite-width inner region**, developed for linear stability analysis of resistive MHD, to **weakly nonlinear cases**
- ▶ Our new method
 - applies both **linear and nonlinear phases continuously**
 - well approximates the fully-nonlinear simulation, with **shorter computational time**

Schematic explanation

