



Training on MHD stability workflow

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Python based workflow



- Ideal/resistive MHD workflow for linear stability analysis, fully compliant to IMAS using iWrap python actors.
- Configuration fully embedded in a **single JSON file** (modular and self-contained)
- GUI based but can also be executed on the CLI (*driver script skips GUI and optionally also IDS write to db – useful to integrate in other workflows*)
- Includes HELENA, CHEASE, ILSA (MISHKA-1, CASTOR not fully ok) and MARS physics codes. Easily extendable to other codes e.g. MARS-X “family”
- Fully multi-device compatible and multi-actor friendly.
- **Integration in HFPS started in collaboration with TSVV11.**

EQSTABIL

File

Database Settings Equilibrium Linear MHD Running Options

Device

tcv

User

g2rcoelh

Shot

63540

Run_in

81

Run_out

9998

Time

1.0

EQSTABIL

File

Database Settings Equilibrium Linear MHD Running Options

Modify Equilibrium y

Run Equilibrium y

Run MHD n

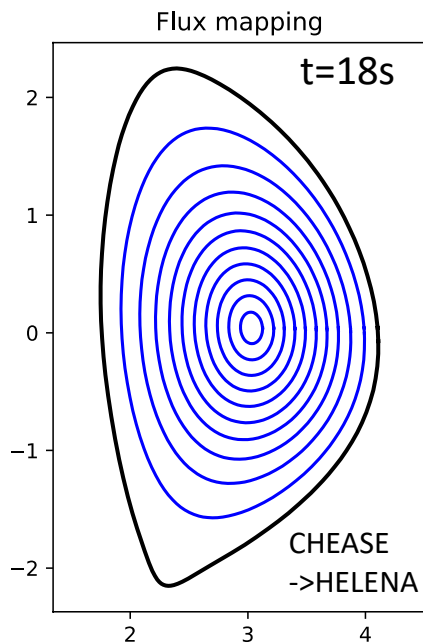
Only Plot Equilibrium y

Only Plot MHD n

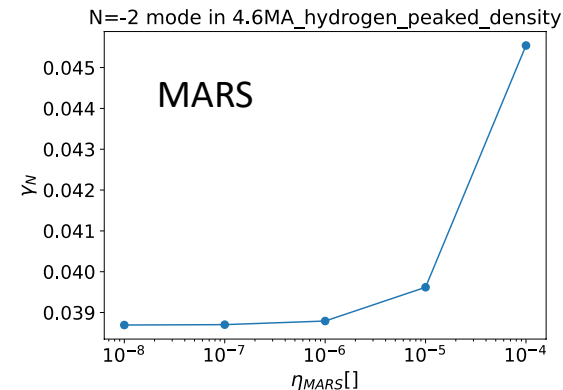
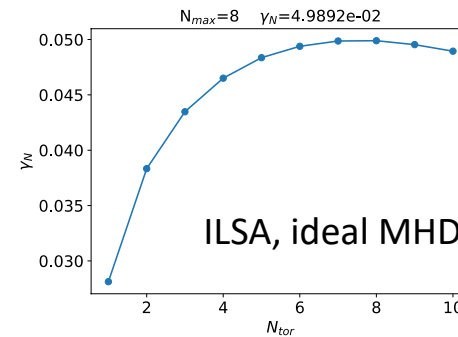
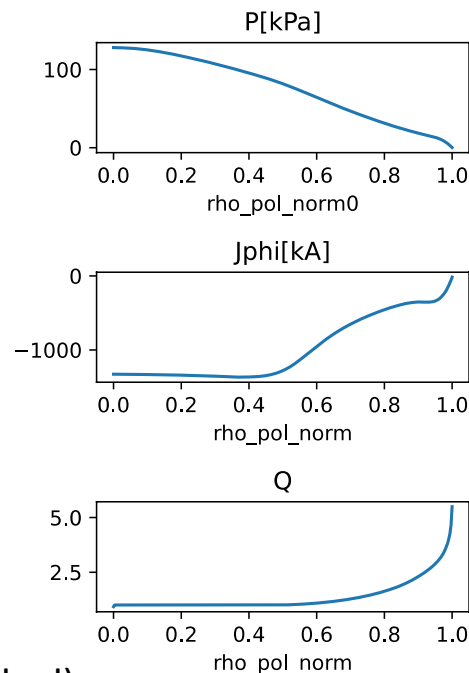
Test cases and ongoing/planned work



- Test cases prepared for JET, AUG, TCV, JT-60SA (legacy scenarios + 4.6MA Jan2024), circular test case.
- **Integration in HFPS started in collaboration with TSVV11**, WEST case.
- Migration of MARS (resistive+compressible) to iWrap actor ready (*to be merge to main repo*).
- **Plan:**
 - Consolidate the documentation for test cases.
 - Conclude central installation as a module at the Gateway (*only iWrap actors right now, DD 3.38.1 compliant, workflow itself not yet*).
 - Provide training for EF users.



4.6MA Jan2024 (H peaked)



- *Q-profile comes slightly hollow at the core – too low res in original equilibrium – $q=1$ present (shouldn't !)*
- *Consistency in cocos of original IDS...*