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EUROfusion IPP

Non-linear MHD simulations of ITER VDE with runaway electrons

Non-linear MHD simulations of ITER VDE with simultaneous generation of runaway electrons using JOREK-STARWALL[*] code

- Cold VDE of a non-stochastic post thermal-quench plasma
- $I_p=15MA$, constant density and constant temperature
- Effects of all conducting structures considered
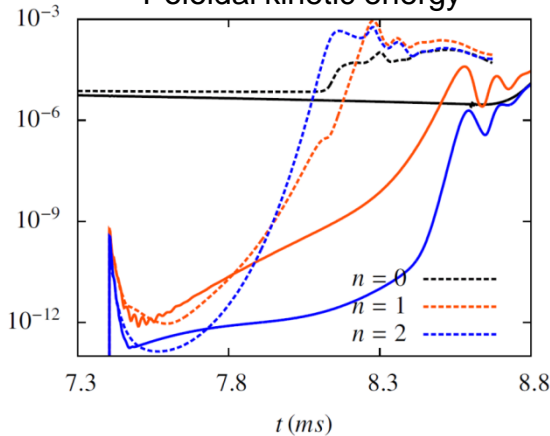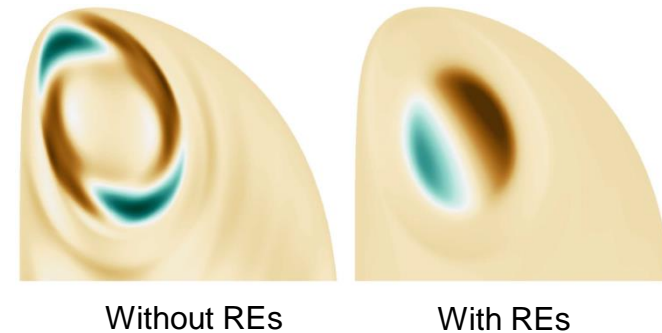- Fluid model for runaway electrons

Configuration[#]
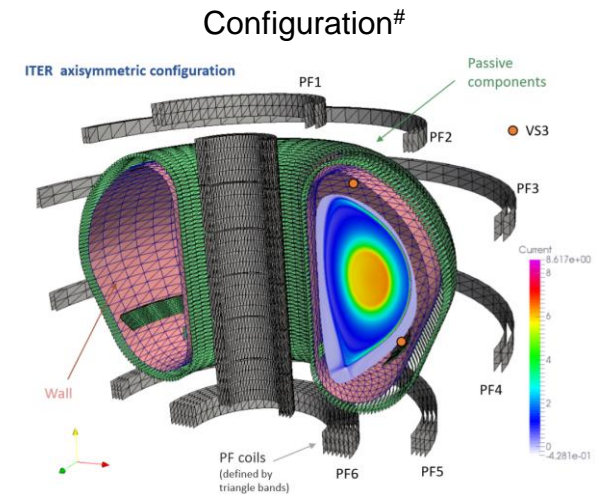
Preliminary results

Safety factor
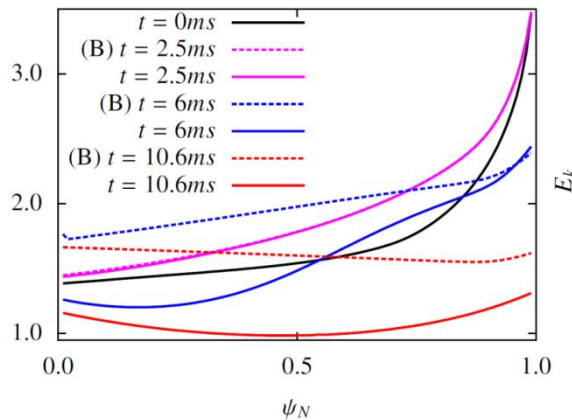
Poloidal kinetic energy

Electric potential : non-zero modes

Without REs   With REs

- RE current profile peaking leads to q<1
- (1,1) mode observed to dominate in the presence of REs[$]

* Czarny et. al . J. Comput. Phys. 2008
* Hoelzl et. al . J. Phys 2012
# Artola et. al .NF 2018
$ Aleynikova et. al. PPR 2016