

Important contributions to the Fusion Roadmap?

- Characterization, avoidance, prediction and mitigation of disruptions and REs
 - Companion to ITER (avoidance and prediction, SPI, testbed for ITER DMS upgrade options)
 - Sacrificial limiters for REs (DEMO relevant)
 - RE killer passive coil
 - Disruptions on liquid metal divertor

8.1 Weak similarity scaling & DTT



Different scope compared to chapter 1. Focus on fundamental physics processes.

□ Weak Kadomtsev scaling [Pizzuto et al NF2010]:

→ fix $\rho_* R^\epsilon$, β , ν_*

□ Weak scaling of $\rho_* R^\epsilon$

□ Cross-scale coupling (micro-meso scales) is preserved;

□ Preserve ρ_{*EP}/ρ_* set by T_{EP}/T , given by condition of dominant electron heating

□ Fix β and stability

□ Preserve temporal scale hierarchy: frequency ordering of meso- to macro-scale fluctuations

□ Fix collisionality parameter ν_*

□ Preserve edge physics and PWI (PPEX)

□ Preserve supra-thermal particle content in the core