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Edge physics (Kobayashi)

- Divertor functions in fusion device

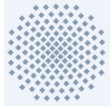
Power load mitigation: demanding task – **establishment of scaling of λ_p (energy falling length) for SOL in helical devices** (or DB of power deposition channel), ongoing but not sufficient

- Extracting χ by comparison between exp. and modelling

- Seek for stable detachment (W7-AS, LHD: stable in modelling, exp confirmation required)

Impurity control: Extreme high density in both LHD & W7-AS does not suffer impurity, edge screening effect, island effect on impurity retention

Particle exhaust: open divertor & no high recycling regime



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QA

How does “ λ_p ” behaves in LHD ?

Blob speed in LHD ? No measurement.

Beta and current effects on divertor “stability”: modification of divertor leg position, deposition profiles can change in poloidal/toroidal direction → **quantitative understanding of edge configuration**

Edge diagnostics to be added

Turbulent measurement, probes (hardware issues), velocity field
→ reactor studies

Quantitative estimate of edge retention effect

Reactor relevant divertor study in JET → similar setting in helical systems ?

Collaboration with TEXTOR-DED ? → exchange data and information, analysis