

Summary draft for CWGM 08, Toki

LHD: ETB in the stochastic layer

The location: combined effects of the rational surface ($1/2\pi=1$ or 2) and connection length.

Features of ELMs clearly depends on the R_{ax} . (outward: ELM free or giant, inward: burst)

Poloidal rotation velocity: $+1 \rightarrow -5$ km/s

Transition scenarios: by RICs, TAE burst (transient improvement)

↑ How about in another helical devices?

TJ-II: No indication of radial spreading of turbulence at L-H transition

Signatures of radial spreading of turbulence at H-L transition

↑ suggests relation between the barrier width and radial turbulence spreading

↑ comparison with helical devices. Possibility of joint work?

oscillations of just before back transition

W7-AS: MHD-equilibrium of H-mode with vmec200 (basis for HINT2)

Boundary structures are similar (L/H, with, w/o j_{tor}) and indentations increase with β & j_{tor}

Central ι changes while edge ι unchanges

Open issues: Ohkawa current, power and current balance, Z_{eff} ,

URAGAN: video participation

Work for 2011-2012

- Status of NF paper
- Next publication → see Matthias' s slide
- Joint works → see Matthias' s slide
- Contribution to major conferences

EPS, APS, H-mode WS(Oct. 10-12, 2011, Oxford), ISHW(Jan.-Feb. 2012), IAEA-FEC 2012

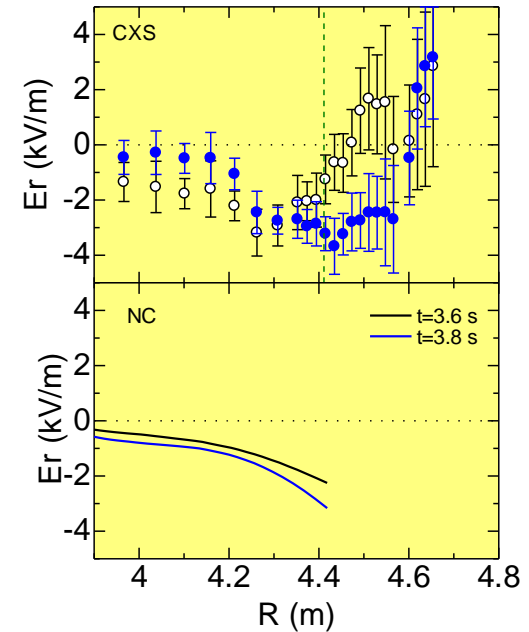
from summary draft for CWGM 07, Greifswald

LHD & CHS:

- exploration of H* in LHD (IAEA post deadline by Toi et al)
 - presented at IAEA
- compare Rax inward shifted H-mode in LHD and CHS in view of limiter H-mode (e.g TEXTOR) (Akiyama)
 - comparison of CHS with TEXTOR have just started (e.g. edge parameter).
- power threshold: data base: separate power-from current drive effects (co-counter) (Akiyama)
 - not enough discharges with different NBI injections.
- LHD: Er determined by neoclassics? (how to deal with this in the ergodic layer)
 - roughly yes, inside LCFS at least.
- explore dynamic flows: Doppler reflctometry in preparation
 - preliminary velocity data were acquired in the last campaign.

TJ-II:

- “.. make use of the diagnostics !” (IAEA poster contribution by Estrada et al)
 - presented at IAEA “ L-H transition experiments in the TJ-II stellarator”
- suggestion from Wagner to make use the unique capability to explore the iota dependency, equilibria ?



from summary draft for CWGM 07, Greifswald

Heliotron-J:

- Improve edge diagnostics (CXRS, reflectometry , Thomson ...)
→ reflectometry, thomson scattering is constructing.

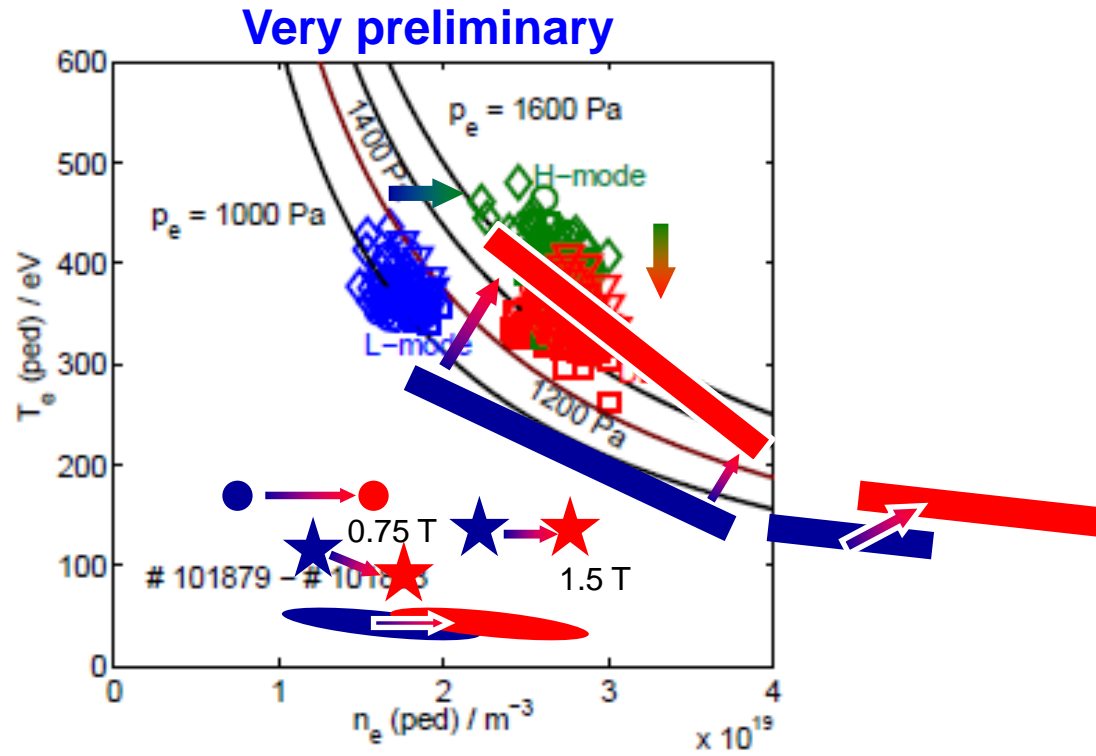
H-mode configurations: from vacuum to (Hint2) equilibria

- low shear: iota dependence in view of viscosity and rationals (etc.) in the edge region, ergodicity Heliotron-J (Suzuki), W7-AS (Geiger,input Hirsch) , TJ-II (?)
→ presented by Geiger.
- neo-classical expectations for equilibrium ExB (at LHD ? TJ-II)
→ inside LCFS
- expectations for dynamic flows (from particle drifts, from rationals, from topology (geodet. curvature...) (?)
→

... an issue for next year:

- ELMs (W7-AS, TJ-II, LHD “giant ones “?), they are limiting confinement ! target load (Drewelow), stability analysis gains from knowledge on configuration
→ Drewelow and Marcin installed camera system on LHD

Edge parameters before/after transition



- H / L**
- W7-AS ($B_0=2.5$ T)
P. Grigull, 26th EPS (1999)
- TJ-II ()
H-mode database
- LHD ($B_t=0.75, 1.5$ T)
7th CWGM
needs more statistic
- CHS ($B_t=0.95$ T)
7th CWGM
- TEXTOR ($B_t=1.9$ T)

Over plotted in Fig. 3 in proceeding ECA Vol.31F, P-2.053 by B.Unterberg for 34th EPS 2 - 6 July 2007

Radial positions to be plotted should be consider much more.
Time evolution may be interesting.

- How much are the maximum of the edge pressure and the gradient?
- What kind of instability limits growth of the edge gradient?
- How the gradient develops? Effects of the stochastic layer?
→ Hints to increase H-factor of helical devices