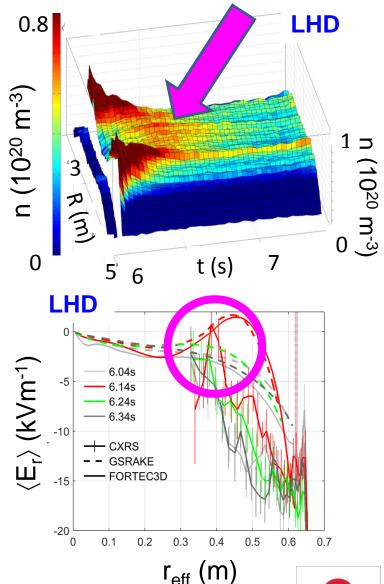


The effect of transient density profile shaping on transport in large stellarators and heliotrons



time scale τ_{n}

EX/P5-1



DINKLAGE, SAKAMOTO, YOKOYAMA, IDA et al.,



This work is partly supported by a Grant-in-Aid for Scientific Research of Japan Society for the Promotion of Science (JSPS) (No. 15H02336). This work is also partly supported by the National Institute for Fusion Science grant administrative budget (NIFS10ULHH021).



Pellet injection (PI) in large 3D devices

Density control in ECR heated plasmas

Scenario development for steady-state

(e.g. W7-X high-density operation)

reactor grade plasmas

Slow core fuelling studied

Neoclassical (NC) particle fluxes:

But always: $|\mathbf{E}_{r}^{NC}| < |\mathbf{E}_{r}^{CXRS}|$

WAS NOT CONFIRMED

 $\Gamma^{\text{NC}} \sim \Gamma^{\text{exp}}$ (except. directly after PI)

Small response on radial electric field

⇒ VALIDITY OF NC THEORY FOR TIMES W/

STRONGLY HOLLOW DENSITY PROFILES

except directly after PI: $E_r \rightarrow 0$

Transport Studies

This work has been carried out within the framework of the EUROfusion Consortium and has received funding from the Euratom research and training programme 2014-2018 under grant agreement No 633053. The views and opinions expressed herein do not necessarily reflect those of the European Commission.