

RUNAWAY ELECTRON MODELLING IN THE ETS SELF-CONSISTENT CORE TRANSPORT SIMULATOR

G. I. Pokol¹, S. Olasz¹, B. Erdos¹, G. Papp², M. Aradi³, T. Jonsson⁴, Y. Peysson⁵, J. Decker⁶, M. Hoppe⁷, D. Yadikin⁷, D. Coster², D. Kalupin⁸, P. Strand⁷, J. Ferreira⁹ and the EUROfusion-IM Team

¹ NTI, Budapest University of Technology and Economics, Hungary ...

Step-by-step approach to runaway electron modelling in EU-IM

- (1) **Runaway Indicator** → indicate need for RE modeling
- (2) **Runaway Fluid** → analytical growth rates, runaway current (~GO)
- (3) **Kinetic modelling** (LUKE,NORSE) → detailed modelling with coupling challenges identified

Physics modules integrated into European Transport Simulator (ETS)

- (1) **Runaway Indicator** standard in ETS
- (2) **Runaway Fluid** in ETS tested against GO for thermal quench scenarios
- (3) **Runaway Fluid** extends applicability of ETS
- (4) **Kinetic code** integration in progress

