



Filamentary transport in high-power H-mode conditions and in no/small-ELM regimes to predict heat and particle loads on PFCs for future devices

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Objectives:

1. Provide cross-machine L-Mode shoulder dependence on current both at constant B_t and at constant q_{95}
2. Establish robust scenario for density shoulder profile in H-Mode and establish dependence on fuelling/neutral profiles/divertor condition
3. Use the new HHF probe on AUG to study filamentary transport under high-power H-Mode conditions and under different plasma configurations (SN, DN)
4. Study the role of ELM regimes, neutral compression and particle density in filamentary transport and related shoulder formation
5. Identify the contribution of collisionality and seeding on filamentary transport and related shoulder formation
6. Determine the effect of filaments and shoulder formation on target heat loads in different H-mode plasmas



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So far H-Mode operation has been limited to AUG since no operational scenario in high-density NBH heated plasma on TCV has been established