

Abstract Submitted
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Stationary ELM-free H-mode on TCV¹ L. PORTE, S. ALBERTI, E. ASP, A. BORTOLON, A. KARPUSHOV, Y. MARTIN, O. SAUTER, Ecole Polytechnique Federale de Lausanne (EPFL), Centre de Recherches en Physique de Plasmas, Association EURATOM Confédération Suisse — By heating an ohmic ELMy H-mode target using vertically launched 3rd harmonic X-mode ECRH (X3), it was possible to obtain coupled power up to ≈ 1.3 MW which was much greater than the \approx These discharges often transited to an ELM-free H-mode regime with constant electron density and stored energy in which the stored energy and toroidal beta both doubled. The maximum, achieved toroidal beta was 2.5% while the ideal beta-limit for these discharges was 3.5%. The recycling light level was high compared to the baseline ohmic H-mode level and the fluctuations in the recycling light level were correlated with core MHD. The energy confinement time was high, $H_{IPB98(y,2)} \approx 1.7$, and was limited by core MHD. Measurements of ion temperature profiles and rotation velocity showed that the mid-radius ion temperature increased from 500 eV to 1 keV while the plasma rotation increased also from 5 km s⁻¹ to 50 km s⁻¹. An overview of these experiments will be presented.

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