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P2.1042 ELM electron temperature measurements on divertor compared to the pedestal temperature in the COMPASS tokamak.

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Investigation of the ELM using divertor probes can provide heat loads and electron temperature with high temporal resolution [1, 2]. Recent evaluation of ELM electron temperature with JET divertor probes showed that the maxima of ELM electron temperature are almost one order of magnidute lower than the pedestal temperature [3]. However, JET probe results use conditionally averaged ELM I-V characteristics, which could underestimate the electron temperature maxima due to the filamentary structure of the ELMs [4]. We report on systematic measurements of the ELM electron temperature in the COMPASS divertor during a set of ELMy H-mode discharges aiming at a comparison between the ELM peak values and the corresponding pedestal temperature. The pedestal temperature in the last 30% of ELM cycle is routinely provided by a high-resolution Thomson scattering (HRTS) system using a conventional modified tangential (mtanh) fit. Newly, we have also obtained the electron temperature on top of the pedestal by means of the two-line fitting method (bilinear). The divertor electron temperature is monitored by a system of probes [1] with microsecond temporal and 3.5 mm spatial resolution. A downstream outboard profile of the peak values is obtained for each ELM. The resulting maxima of the profiles are compared to the pedestal temperature. It was found that the downstream ELM electron temperature maxima do not show any significant reduction with respect to the pedestal temperature. These results are discussed within the free-streaming model [5].
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