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Title: Absolute Measurements of the Chemical Erosion Yield of Carbon with Emission Spectroscopy

Abstract: Chemical erosion of carbon is an issue for future fusion reactors such as ITER. We have exposed carbon targets under ITER relevant plasma conditions in the linear plasma generator Pilot-PSI and measured the chemical erosion by optical emission spectroscopy on the CH AX band. The photon efficiency the ratio between the number of photons and the number of eroded particles was determined for the Pilot-PSI specific plasma conditions by injecting CH₄ at the target. These results were combined to obtain the absolute chemical erosion yield of carbon.