

Abstract Submitted
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Plasma Position Diagnostics for Ignitor¹ G. PIZZICAROLI, G. MAD-DALUNO, F. BOMBARDA, ENEA, Italy — The new Gas Electron Multiplier (GEM) detectors, developed at CERN, have demonstrated the possibility of their use for fusion plasma diagnostics in recent measurements obtained by the NSTX and FTU devices. Their application to burning plasma experiments, specifically Ignitor, is being considered for measurements of plasma radiation in the UV and X-ray spectral range. In particular, the high counting rate capability of these detectors can be used for real-time control of the plasma vertical and horizontal positions. At the same time, alternative imaging methods employing fast IR thermography are also being considered for the same purpose. In order to verify the viability of GEM detectors as a diagnostics suitable for Ignitor, a basic version of the instrument, featuring a small diameter (30 mm) and only few pixels read-out, is being assembled for easy installation on any presently available device, in a location close to the plasma. The positioning of the detector relatively far from the plasma is also a possible solution to avoid neutron and γ -radiation induced noise. The compact front-end electronics and gas system are ready, while the actual GEM, the associated mechanical support and the data acquisition system are being procured.

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