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P2.048 Upgraded gamma-ray diagnostics for JET DT campaigns

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For the future JET deuterium-tritium (DT) campaigns different gamma diagnostics, in particular the JET Gamma-ray Camera (GC) and the JET Gamma-ray Spectrometer (GS), have been upgraded in the last few years. The main demands for new detectors to be used during DT campaigns are connected with expected high count rates of 0.5 Mcps and with a required energy resolution equal or better than 5% at 1.1 MeV. Upgraded detector systems are based on fast scintillators, LaBr₃:Ce and CeBr₃, coupled to the best suited photodetectors, e.g., a multi-pixel photon counter (MPPC), also known as a silicon photomultiplier or SiPM, and a photomultiplier tube (PMT) operating with an active voltage divider for GC and GS, respectively. Preliminary results obtained with new detectors, already installed at JET, will be presented and compared to those collected in laboratory conditions. Information on basic performance of alternative photodetectors will be included in addition. A short description of a dedicated software for analysis of spectra registered with scintillators will be given.

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Session Classification: P2