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Preliminary results of the new fast ion CTS systems at TEX-TOR and ASDEX Upgrade<sup>1</sup> S.B. KORSHOLM, Riso National Laboratory (Denmark)/PSFC MIT, H. BINDSLEV, Riso, F. MEO, Riso, S. MICHELSEN, Riso, P.K. MICHELSEN, Riso, S.K. NIELSEN, Riso, E.L. TSAKADZE, Riso, J. EGEDAL, MIT, P.P. WOSKOV, PSFC MIT, J. HOEKZEMA, Forschungszentrum Juelich, IPP (Germany), F. LEUTERER, Max Planck Institut fuer Plasmaphysik (Germany), E. WESTERHOF, FOM Institute for Plasma Physics Rijnhuizen (the Netherlands) — Upgraded and new fast ion collective Thomson Scattering (CTS) diagnostics using high power gyrotrons have been implemented on TEXTOR and ASDEX Upgrade tokamaks, respectively. Commissioning of the systems is currently underway and first results have been obtained from TEXTOR. The slowing down of fast ions due to the switching off of the NBI will be discussed, and the measured time evolution will be compared to numerical simulations. The commissioning activities on AS-DEX Upgrade of the 105 GHz receiver and the new 1 MW, 10 s gyrotron will be described. Fast ion physics will be a key research goal on ITER, where confined alpha particles will play a dominant role. CTS using gyrotrons has the potential to satisfy this prime ITER diagnostic need for measuring the spatially localized velocity distributions of confined fast ions.

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