Abstract Submitted
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Ionization Source Effects on near-Antenna Static and Dynamic Electric Field Measurements by Stark-Effect, Passive Emission Spectroscopy[1] C.C. KLEPPER, ORNL, S. PANAYOTIS, B. PEGOURIE, J. JACQUOT, L. COLAS, J. HILLAIRET, CEA, IRFM, R.C. ISLER, ORNL, E.H. MARTIN, NCSU, J.B. CAUGHMAN, J.H. HARRIS, ORNL, S.C. SHANNON, NCSU — Radiofrequency electric fields ($\mathbf{E_{RF}}$) are frequently modeled within the tenuous plasma around high-power launch antennas in the edge of fusion experiments. An experimental measurement of $\mathbf{E_{RF}}$ in the plasma-antenna interface is valuable for assessing these models. Recently, $\mathbf{E_{RF}}$ was determined in front of an LHCD launcher (3.7 GHz) in Tore Supra by fitting D_β line profiles to a fully-dynamic Stark-effect model and obtaining good agreement with full-wave modeling [1]. The measurement was localized within the sightline using the EIRENE neutrals model to estimate the location of peak D_β emission probability, which can be several cm from the plasma-antenna boundary. While facilitating the measurement of the dynamic fields at the LH antenna, this effect is shown to be unfavorable to direct measurement of static (rectified) electric fields, at ICRH antenna surfaces under similar conditions. New modeling capabilities [2] are used to estimate the spatial extent of such DC fields at the Tore Supra ICRH antenna and an upper limit to their value is estimated from D_γ profiles obtained near this antenna. [1] *C.C. Klepper, et al., PRL* **110**, 215005 (2013).[2] *J.Jacquot et al., proc. 20th topic. conf. RF power in plasmas, Sorrento (Italy) 2013, I3.7 (AIP)*

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