

Abstract Submitted  
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**Measurements of internal magnetic structures from neutral beam emission spectra in KSTAR**<sup>1</sup> J. KO, J. CHUNG, M. SONG, K.I. YOU, National Fusion Research Institute — The magnetic pitch angle and the magnitude from magnetically confined fusion devices are measured by fitting the beam emission spectra under the motional Stark effect (MSE). Initial values for the free parameters in the complicated raw spectra are obtained from and constrained by the MSE model in the Atomic Data and Analysis Structure (ADAS) which uses a collisional-radiative model with level populations nlm-resolved up to  $n = 4$  and a simple born approximation for ion-impact cross sections. This technique is examined for the MSE spectra taken from the KSTAR plasma discharges and its validity and applicability are discussed to directly infer the internal magnetic field structure with a wide range of pitch angles. The sensitivity of EFIT reconstruction on these internal magnetic data is also discussed.

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