CXRS measurements of impurities in fusion plasmas are dependent upon local neutral beam densities. These local values can be found from complex penetration codes that depend upon plasma parameters, but they can also be derived directly from beam emission data from the multi-channel MSE diagnostic. Deriving beam densities in this fashion also provides the opportunity to benchmark the penetration codes. Before beam density can be derived from MSE data a channel-to-channel calibration of the MSE system is needed. This can be achieved by analysis of MSE data taken from beam-into-gas shots at a variety of pressures. The pressure variation allows in-situ measurement of the cross-section for beam attenuation, which is then used to acquire the channel-to-channel calibration constants. We will compare these empirical cross-sections with previous measurements. In some cases the atomic beam stopping cross-sections derived with these calibration constants show good agreement with predictions. [Janev, R.K., Boley, C.D., Post, D.E. (1989) PENETRATION OF ENERGETIC NEUTRAL BEAMS INTO FUSION PLASMAS. NUCLEAR FUSION, Vol. 29, No.12, 2125-2139

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