

Abstract Submitted
for the DNP13 Meeting of
The American Physical Society

Quenching of Cross Sections in Nucleon Transfer Reactions B.P.

KAY, J.P. SCHIFFER, Argonne National Laboratory, S.J. FREEMAN, University of Manchester — From a set of experiments on nucleon transfer analysed in a consistent way, we conclude that the quenching of single-particle strength that had been seen in $(e, e'p)$ reactions appears to be a more general phenomenon and is present in nucleon transfer reactions. Absolute cross sections from reactions on targets between ^{16}O and ^{208}Pb have been reduced to spectroscopic factors in a consistent analysis using the distorted wave Born approximation and modern global optical-model potentials. Of the 124 cases analysed, the average quenching factor is found to be 0.55 with an rms spread of 0.10, consistent with what was seen in the proton knockout $(e, e'p)$ work. It appears to be independent of target mass, reaction type, and angular momentum transfer. This work is supported by the US Department of Energy, Office of Nuclear Physics, under Contract No. DE-AC02-06CH11357, and the UK Science and Technology Facilities Council.

B. P. Kay
Argonne National Laboratory

Date submitted: 24 Jun 2013

Electronic form version 1.4