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Spectroscopic Factors from the Single Neutron Pickup Reaction ^{64}Zn($\vec{\mathrm{d}}$,t) KYLE LEACH, University of Guelph — P.E.Garrett[1], G.C.Ball[2], J.C.Bangay[1], L.Bianco[1], G.A.Demand[1], T.Faestermann[3], P.Finlay[1], K.L.Green[1], R.Hertenberger[4], R.Krücken[3], A.A.Phillips[1], E.T.Rand[1], C.S.Sumithrarachchi[1], C.E.Svensson[1], S.Triambak[1], H.-F.Wirth[4], J.Wong[1], [1]Guelph, [2]TRIUMF, [3]TU München, [4]LMU München – A great deal of attention has recently been paid towards high-precision superallowed β-decay $\mathcal{F}t$ values. With the availability of extremely high-precision ($< 0.1\%$) experimental data, precision on the individual $\mathcal{F}t$ values are now dominated by the $\sim 1\%$ theoretical corrections[1]. This limitation is most evident in heavier superallowed nuclei (e.g. ^{62}Ga) where the isospin-symmetry-breaking (ISB) correction calculations become more difficult due to the truncated model space. Experimental spectroscopic factors for these nuclei are important for the identification of the relevant orbitals that should be included in the model space of the calculations. Motivated by this need, the single-nucleon transfer reaction ^{64}Zn($\vec{\mathrm{d}}$,t)^{63}Zn was conducted at the Maier-Leibnitz-Laboratory (MLL) of TUM/LMU in Munich, Germany, using a 22 MeV polarized deuteron beam from the tandem Van de Graaff accelerator and the TUM/LMU Q3D magnetic spectrograph, with angular distributions from 10° to 60°. Results from this experiment will be presented and implications for calculations of ISB corrections in the superallowed β^+ decay of ^{62}Ga will be discussed.

[1] I.S. Towner and J.C. Hardy, Phys. Rev. C **77**, 025501 (2008).

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