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A realistic three-nucleon interaction in the <sup>4</sup>He scattering system<sup>1</sup> JOHANNES KIRSCHER, HARALD GRIESSHAMMER<sup>2</sup>, The George Washington University — Using the framework of the refined resonating group (RRGM) variational technique we investigate the  $J^{\pi} = 0^+$  partial wave of the <sup>4</sup>He scattering system for an adjusted version of the realistic Illinois potential model (IL) which was devised as an extension of the Urbana IX (UIX) model. We compare the results to an R-matrix analysis and an RRGM calculation for the UIX potential. The binding energy, the S-, P-, D-state probabilities, the average charge- and mass radii of the <sup>4</sup>He bound state are given as well. We find all results consistent with the UIX ones and note only a difference in the t-p and <sup>3</sup>He-n phase shifts in the region of the T = 0 resonance.

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