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**Model-Independent Calculation of Radiative Neutron Capture on Lithium-7** GAUTAM RUPAK, LAKMA FERNANDO, Mississippi State University, RENATO HIGA, KVI Groningen — The radiative neutron capture on lithium-7 is calculated model independently using a low energy halo effective field theory. The cross section is expressed in terms of scattering parameters directly related to the  $S$ -matrix element. The capture through E1 and M1 transitions is considered. At low energy the cross section depends on the poorly known  $p$ -wave effective range parameter  $r_1$ . This constitutes the leading order uncertainty in traditional model calculations. It is explicitly demonstrated by comparing with potential model calculations. A single parameter fit describes the low energy data extremely well and yields  $r_1 \approx -1.54 \text{ fm}^{-1}$ . The contribution from two-body currents is also discussed.

Gautam Rupak  
Mississippi State University

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