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The Similarity Renormalization Group for Three-Body Bound State; A Three-Dimensional Approach M.R. HADIZADEH, Department of Physics and Astronomy and Institute of Nuclear and Particle Physics, Ohio University, Athens, OH 45701, K.A. WENDT, Department of Physics, The Ohio State University, Columbus, OH 43210, CH. ELSTER, Department of Physics and Astronomy and Institute of Nuclear and Particle Physics, Ohio University, Athens, OH 45701 — Similarity renormalization group (SRG) evolution of two- and three-body interactions is studied in a three-dimensional (3D) momentum representation. The SRG flow equations are formulated as a function of momentum vector variables, without using the partial wave (PW) representation. The non-PW form of SRG evolved two- and three-body interactions, obtained from spin-independent interactions, are used to solve the Faddeev integral equations for the bound state in 3D. The dependence of the binding energy on the flow parameter of the evolved two-and three-body interactions is investigated and properties of wave function are studied as function of the SRG evolution.

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