

2N and 3N systems in a three dimensional formalism

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A recently developed formalism to treat two and three nucleon states and operators will be presented. Tools that implement this formalism in the symbolic programming language of the Mathematica® system were used in calculations presented in Refs. [1-3]. They provide a framework that allows us to directly create FORTRAN implementations of analytical expressions arising in two- and three-nucleon bound state and transition operator calculations and will be discussed during the presentation. Our treatment of large linear operators, necessary to produce solutions and constructed from the automatically generated FORTRAN implementations will be described.

[1] K. Topolnicki *et al.*, Deuteron Disintegration in Three Dimensions, FBS 0177-7963 (2012).

[2] J. Golak *et al.*, A Three-Dimensional Treatment of the Three-Nucleon Bound State, FBS 0177-7963 (2012).

[3] J. Golak *et al.*, Different Methods for the Two-Nucleon T-Matrix in the Operator Form, FBS 0177-7963 (2012).

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