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A versatile R-matrix module including alternative parametrizations

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The R-matrix formalism is well suited and worldwide used for the description of nuclear reactions in the resonance region. At present there exist several excellent R-matrix codes for extended analyses of nuclear reaction data (e.g. SAMMY, AZURE, AMUR, EDA, RAC et others). Recently the coupled-channel code system GECCCOS has been developed at TU Wien which includes a versatile R-matrix module. The latter serves as a platform for the test of new developments in the field.
In this contribution an overview and newly implemented features of this R-matrix module are presented. Major modifications concern the capability of R-matrix analyses with alternative parametrizations. Especially, the implementation of the alternative R-matrix parametrization by Park [1] will be discussed. A first application of this feature to real data will be presented and compared with standard R-matrix analysis.
Further ongoing developments concern the improved capability of Reduced R-matrix analyses, the inclusion of polarization observables and the development of a graphical user interface.

[1] T.-S. Park, Phys. Rev. C 104, 064612 (2021)

Primary authors: LEEB, Helmut; SRDINKO, Thomas

Presenter: SRDINKO, Thomas

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