Contribution ID: **42**   Type: **Poster**

Development of R-matrix formulations for three-body systems

Tuesday 9 July 2024 17:44 (1 minute)

The R-matrix formalism provides an elegant tool for the description of resonant reaction cross sections. Albeit not microscopically based it is widely used because it satisfies conservation rules and yields consistent sets of reaction cross sections. However, R-Matrix theory is limited to two-body channels, while approximations are frequently required for the description of capture and breakup channels. In this presentation we revisit the status of developments of R-matrix formalisms suited for three-body channels. Especially, we consider the extension of the Glöckle formalism based on general R-matrices. The key of the improved method is the introduction of a generalized Bloch operator, suggested by Baye, which restores hermiticity of the Hamiltonian in the inner region. In addition we propose the R-matrix Faddeev method which promises a straightforward combination with standard R-matrix analyses. First applications of both methods will be presented.

Primary authors: WUEHRLEITNER, Felix Willibald;   LEEB, Helmut;   SRDINKO, Thomas;   WOJTA, Tobias

Presenter: WUEHRLEITNER, Felix Willibald

Session Classification: Poster Session

Track Classification: R-matrix theory