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The package reported consists of routines to compute matrix elements in a Burnett function basis for a mixture of hard sphere gases, as also the loss integral of a Burnett mode and the functions themselves. The matrix elements involve the Clebsch-Gordan and Brody-Moshinsky coefficients, both of which are used here for unusually high values of their arguments. For the purpose of validation, both coefficients are computed using two different methods. Though written for hard sphere molecules, the package can, with only slight modification, be adapted to more general molecular models as well.

MSC:
76P05 Rarefied gas flows, Boltzmann equation in fluid mechanics
76M25 Other numerical methods (fluid mechanics) (MSC2010)
76-04 Software, source code, etc. for problems pertaining to fluid mechanics

Keywords:
orthogonal functions; Burnett function; Clebsch-Gordan and Brody- Moshinsky coefficients; hard sphere molecules

Software:
KINPACK

Full Text: DOI

References:
[18] Brody, T.A.; Moshinsky, M., Tables of transformation brackets, (1960), Universidad de Mexico Mexico City

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