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Summary: A constructive method for decomposing finite dimensional representations of semisimple real Lie algebras is developed. The method is illustrated by an example. We also discuss an implementation of the algorithm in the language of the computer algebra system GAP4.

MSC:
17B45 Lie algebras of linear algebraic groups
20C40 Computational methods (representations of groups) (MSC2010)
16Z05 Computational aspects of associative rings (general theory)
17B81 Applications of Lie (super)algebras to physics, etc.

Keywords:
Lie algebras; Weyl group; real representation; highest weights; joint-invariants

Software:
GAP; CoReLG

Full Text: DOI arXiv

References:
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