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★**Isomorphism verification for complex and real Lie algebras by Gröbner basis technique. (English summary)**

Modern group analysis: advanced analytical and computational methods in mathematical physics (Acireale, 1992), 245–254, *Kluwer Acad. Publ.*, *Dordrecht*, 1993.

The package ISOLIE/ASYS is introduced. It allows one to decide whether two finite-dimensional complex or real Lie algebras given by structure constants are isomorphic or not and to construct existing isomorphisms. The package uses the technique of Gröbner bases of ideals of algebras of commutative polynomials. ISOLIE/ASYS needs seconds for Lie algebras of dimension 3, minutes for dimensions 4 and 5, hours for dimension 6 and days for dimensions 7 and 8.

{For the collection containing this paper see MR1259535}

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