

Uniqueness and Extremal Properties of Distributive Lattices in the Setting of Lie Algebra Representations

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Abstract

Abstract: We have found many families of distributive lattices whose Hasse diagram edges can be assigned coefficients in such a way that one can recover explicit descriptions of Lie algebra representations. We now have an iterative combinatorial procedure for computing the coefficients on the edges for some of these lattices. We apply this algorithm in the setting of two families of distributive lattices corresponding to certain irreducible representations of the simple Lie algebra G_2 .