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# POLYNOMIAL REPRESENTATIONS OF CLASSICAL LIE ALGEBRAS AND FLAG VARIETIES

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## Abstract

Recently we have started a program to describe the action of Lie algebras associated with Dynkin-type diagrams on generic Verma modules in terms of polynomial vector fields. In this paper we explain that the results for the classical ABCD series of Lie algebras coincide with the more conventional approach, based on the knowledge of the entire algebra, not only the simple roots. We apply the coset description, starting with a large representation and then reducing it with the help of the algebra, commuting with the original one. The irreducible representations are then obtained by gauge fixing this residual symmetry.

**Date :** Wednesday, March 16, 2022

**Time:** 15:00

**Place:** IMBM at Boğaziçi University, South Campus