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Linear free divisors and quiver representations. (English) [Zbl 1101.14013](#)

Lossen, Christoph (ed.) et al., Singularities and computer algebra. Selected papers of the conference, Kaiserslautern, Germany, October 18–20, 2004 on the occasion of Gert-Martin Greuel's 60th birthday. Cambridge: Cambridge University Press (ISBN 0-521-68309-2/pbk). London Mathematical Society Lecture Note Series 324, 41-77 (2006).

Summary: Linear free divisors are free divisors, in the sense of K. Saito, with linear presentation matrix. Using techniques of deformation theory on representations of quivers, we exhibit families of such linear free divisors as discriminants in representation varieties for real Schur roots of a finite quiver. Along the way we review some basic results on representation varieties of quivers, their associated fundamental exact sequence and semi-invariants; explain in detail how to verify the occurring discriminant as a free divisor and how to determine its components and their equations. As an illustration, the linear free divisors that arise as the discriminant from the highest root of a Dynkin quiver are treated explicitly.

For the entire collection see [\[Zbl 1086.14001\]](#).

MSC:

- [14D15](#) Formal methods and deformations in algebraic geometry
- [16G20](#) Representations of quivers and partially ordered sets
- [58K60](#) Deformation of singularities
- [14C20](#) Divisors, linear systems, invertible sheaves
- [13A50](#) Actions of groups on commutative rings; invariant theory

Cited in **2** Reviews
Cited in **18** Documents

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