

Abeasis, S.; Del Fra, A.

Degenerations for the representations of a quiver of type \mathcal{A}_m . (English) Zbl 0598.16030
J. Algebra 93, 376-412 (1985).

Let Q_m be a quiver of type \mathcal{A}_m , $d = (d_1, \dots, d_m)$ an m -tuple of non-negative integers and L_d the variety of all representations of Q_m of dimension d over a fixed field k . In the paper, to each representation $A \in L_d$ one associates a set of non-negative integers $N^A = \{N_{uv}^A \mid 1 \leq u \leq v \leq m\}$ which determines uniquely the orbit \mathcal{O}_A of A with respect to the natural action of the group $G = \prod_{i=1}^m \text{Gl}(d_i, k)$ on L_d . The main result asserts that $\mathcal{O}_B \subset L_d$ is a degeneration of $\mathcal{O}_A \subset L_d$ (that is \mathcal{O}_B is contained in the closure $\bar{\mathcal{O}}_A$ of \mathcal{O}_A) if and only if $N_{uv}^B \leq N_{uv}^A$ for every u, v , $1 \leq u \leq v \leq m$. The proof is purely combinatorial. A more elegant treatment of a more general situation the reader can find in a preprint of *Ch. Riedtmann* [L'Institut Fourier, No.19, Grenoble (1984)].

Reviewer: [A.Skowroński](#)

MSC:

[16Gxx](#) Representation theory of associative rings and algebras
[14L30](#) Group actions on varieties or schemes (quotients)
[14D15](#) Formal methods and deformations in algebraic geometry
[14L24](#) Geometric invariant theory
[16P10](#) Finite rings and finite-dimensional associative algebras

Cited in **4** Reviews
Cited in **21** Documents

Keywords:

quiver of type \mathcal{A}_m ; representations; orbit; natural action; degeneration

Full Text: [DOI](#)

References:

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