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Leibniz
Universität
Hannover

Oberseminar

zur

Algebra und Algebraischen Kombinatorik

Dr. Alison Parker
(University of Leeds, GB)

"Delta-filtered modules and nilpotent orbits of a parabolic subgroup in O_N "

In joint work with Karin Baur (ETH, Zürich) and Karin Erdmann (Oxford), we study certain Delta-filtered modules for the Auslander algebra of $k[T]/T^n \rtimes C_2$ where C_2 is the cyclic group of order two. The motivation of this lies in the problem of describing the P -orbit structure for the action of a parabolic subgroup P of a linear algebraic group on its nilradical \mathfrak{n} . In general, there are infinitely P -orbits in \mathfrak{n} and it is a "wild" problem to describe them. However, in the case of a parabolic subgroup of SL_N , there exists a bijection between P -orbits in the nilradical and certain (Delta-filtered) modules for the Auslander algebra of $k[T]/T^n$, due to work of Hille and Rohrle and Brüstle et al.. Under this bijection, the Richardson orbit (i.e. the dense orbit) corresponds to the Delta-filtered module without self-extensions. It has remained an open problem to describe such a correspondence for other classical groups.

In this talk, the Auslander algebra of $k[T]/T^n \rtimes C_2$ is established as the right candidate for the orthogonal groups. In particular, for any parabolic subgroup of an orthogonal group we construct a map from parabolic orbits to Delta-filtered modules. In the case of the Richardson orbit, the result has no self-extensions.

Montag, 05.12.2011
ab 14:30 Uhr, Raum a410

Hauptgebäude der Leibniz Universität Hannover

Alle Interessierten sind herzlich eingeladen.

gez. Prof. Dr. C. Bessenrodt

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