Parabolic orbits in nilpotent Lie algebras

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We describe a class of symmetric Δ-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 for this is to model the P-orbits in the nilradical of a parabolic subalgebra $\mathfrak{p} = \mathrm{Lie}\, P$ where P is a parabolic subgroup of an even orthogonal group. This extends work of Hille et al., ([2] and [3]) on the general linear group to the case of orthogonal groups. Joint work with K. Erdmann and A. Parker, see [1].

[1] BAUR, K.; ERDMANN, K.; PARKER, A. Δ-*filtered modules and nilpotent orbits of a parabolic subgroup in orthogonal groups*. Preprint, arXiv:0809.0289v2.

[2] HILLE, L.; RÖHRLE, G. *A classification of parabolic subgroups of classical groups with a finite number of orbits on the unipotent radical*. Transform. Groups 4 (1999), no. 1, 35–52.

[3] BRÜSTLE, T.; HILLE, L.; RINGEL, C.; RÖHRLE, G. *The Δ-filtered modules without self-extensions for the Auslander algebra of $k[T]/\langle T^n \rangle$*. Algebr. Represent. Theory 2 (1999), no. 3, 295–312.