Local Ext-limitations do not exist

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In this talk it was shown that for k a field and the four dimensional algebra $\Lambda = k\langle x, y\rangle/\langle x^2, y^2, xy+qyx\rangle$ when $q^n \neq 1, 0$ for all n, there exist a two dimensional module M and a family of two dimensional modules $M_i,\ i = 1, 2, \ldots,$ such that $\dim_k \operatorname{Ext}^i_\Lambda(M, M_j) = 1$ for $i = 0, j$ and $j + 1$ and zero otherwise. This is probably the easiest example giving a negative answer to a question raised by Maurice Auslander.

References

[1] S. O. Smalø, *Local Limitations of the Ext-Functor do not exist*. To appear in Bull. of London Math. Soc.