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TITLE: On generic singularities for representations of Dynkin quivers of type D

ABSTRACT: This is a report on a joint work with Grzegorz Zwara.

Given a representation M of a quiver Q an important object of study is the closure $\overline{O_M}$ of the orbit O_M of M in the space of representations of Q with dimension vector $\dim M$, considered as a scheme with its reduced structure. There is another natural scheme associated with M , denoted C_M , which is defined using hom-conditions. It is known that the reduced structure of C_M coincides with the structure of $\overline{O_M}$ for the Dynkin and Euclidean quivers. Moreover, Riedtmann and Zwara have proved that the above schemes coincide for the Dynkin quivers of type A. Our aim is to study what happens for the Dynkin quivers of type D. We prove that in this case the tangent spaces to both schemes are the same for the points, which are generic singularities of C_M . Consequently, the sets of singular points of $\overline{O_M}$ and C_M coincide.