INFINITESIMAL qG-DEFORMATIONS OF CYCLIC QUOTIENT SINGULARITIES

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ABSTRACT. The deformation theory of a two-dimensional cyclic quotient singularity S, i.e. a two-dimensional toric singularity was studied a lot. Nowdays, there is a clear understanding of the component structure of the versal deformations and its relations to so-called P-resolutions. However, not every flat deformation should be allowed in moduli theory. There, it becomes important that several (or all) reflexive powers $\omega_S^{[r]}$ fit into the deformation as well. We will study this property in dependence on r. While the answers are already known for deformations over reduced base spaces (char = 0), we will now focus on the infinitesimal theory. (This is joint work with J'anos Koll'ar.)