

MR1660640 (2000f:14052) 14J17
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Cyclic quotient surface singularities: constructing the Artin component via the McKay-quiver.

Singularities and complex analytic geometry (Japanese) (Kyoto, 1997).

Sūrikaiseikikenkyūsho Kōkyūroku No. 1033 (1998), 163–171.

There has been an extensive study on the deformation theory of Klein singularities, i.e. quotient surface singularities of embedding dimension 3, alias rational double points. For example, P. B. Kronheimer [J. Differential Geom. **29** (1989), no. 3, 665–683; [MR0992334](#); J. Differential Geom. **29** (1989), no. 3, 685–697; [MR0992335](#)] gave an invariant-theoretic construction of the monodromy trivializing finite covering of the versal deformation and the simultaneous resolution of this family. A quiver-theoretic approach has been proposed by him and was carried out by H. Cassens and P. Slodowy [in *Singularities (Oberwolfach, 1996)*, 263–288, Progr. Math., 162, Birkhäuser, Basel, 1998; [MR1652478](#)].

But this quiver-theoretic construction cannot be extended straightforwardly to general quotient surface singularities $X = \mathbf{C}^2/\Gamma$, Γ a small finite subgroup of $\mathrm{GL}(2, \mathbf{C})$ (not in $\mathrm{SL}(2, \mathbf{C})$, which is the case of Klein singularities). In this note the author restates the McKay quiver construction for the A_n -singularities in such a manner that it can be generalized to yield, up to a smooth factor, the monodromy covering of the Artin component for all cyclic quotient singularities $A_{n,q}$.

{For the collection containing this paper see [MR1660623](#)}

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