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From References: 2 From Reviews: 2

## MR1087127 (92a:14004) 14B07 (14B12 32S30) de Jong, T. [de Jong, Theo] (D-KSRL); van Straten, D. (D-KSRL) A deformation theory for nonisolated singularities.

Abh. Math. Sem. Univ. Hamburg 60 (1990), 177–208.

A germ X having a nonisolated singular point admits an infinite-dimensional deformation theory. The authors develop a theory of "admissible" deformations in this case. These are deformations of the embedding  $\Sigma \to X$ ,  $\Sigma$  the reduced singular locus, such that the deformed  $\Sigma$  is contained in the singular locus of the deformed X.

Under certain conditions the forgetful transformation to the deformations of X is injective. The tangent space and the obstruction space for the functor of admissible deformations of a hypersurface are described. It turns out that the base space of versal admissible deformations is almost always obstructed. Making additional assumptions on  $\Sigma$  it is proved that the obstructions already lie in a smaller subspace of the obstruction space. Finally some instructive examples and applications are given.

The importance of the theory of admissible deformations of nonisolated hypersurfaces lies in the application to the study of isolated singularities of higher embedding dimension by the authors (applied to rational quadruple points).

This article is written in a clear and explicit style illustrating the infinitesimal calculus of deformation theory without going into every technical detail, and yet being precise and completely understandable.

Reviewed by Bernd Martin

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