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Simple elliptic hypersurface singularities: a new look at the equivalence problem. (English)

[Zbl 1228.32029](#)

Fukui, Toshizumi (ed.) et al., The Japanese-Australian workshop on real and complex singularities, JARCS III, The University of Sydney, Sydney, Australia, September 15–18, 2009. Canberra: Australian National University, Centre for Mathematics and its Applications (ISBN 0-7315-5207-5). Proceedings of the Centre for Mathematics and its Applications, Australian National University 43, 9-17 (2010).

Summary: Let V_1, V_2 be hypersurface germs in \mathbb{C}^m , with $m \geq 2$, each having a quasi-homogeneous isolated singularity at the origin. In our recent joint article with *G. Fels*, *W. Kaup* and *N. Krushilin* [J. Geom. Anal. 21, No. 3, 767–782 (2011; [Zbl 1274.32018](#))], we reduced the biholomorphic equivalence problem for V_1, V_2 to verifying whether certain polynomials arising from the moduli algebras of V_1, V_2 are equivalent up to scale by means of a linear transformation. In the present note we illustrate this result by the examples of simple elliptic singularities of types $\tilde{E}_6, \tilde{E}_7, \tilde{E}_8$ and compare our method with that due to M. G. Eastwood who has also introduced certain polynomials that distinguish non-equivalent singularities within each of these three types.

For the entire collection see [[Zbl 1218.14001](#)].

MSC:

[32S25](#) Complex surface and hypersurface singularities

[13H10](#) Special types (Cohen-Macaulay, Gorenstein, Buchsbaum, etc.)

Keywords:

[isolated hypersurface singularities](#); [Gorenstein algebras](#)