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Examples of application of nil-polynomials to the biholomorphic equivalence problem for isolated hypersurface singularities. (English) [Zbl 1297.32018](#)

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J. N. Mather and *S. S. T. Yau* [Invent. Math. 69, 243–251 (1982; [Zbl 0499.32008](#))] proved that two complex hypersurface singularities are biholomorphically equivalent if their moduli algebras are isomorphic. In [*G. Fels* et al., J. Geom. Anal. 21, No. 3, 767–782 (2011; [Zbl 1274.32018](#))] the authors showed that the equivalence problem for quasi-homogeneous hypersurface singularities can be reduced to the linear equivalence problem for nil-polynomials arising from the moduli algebras. In the paper under review, using the nil-polynomials, the author provides an explicit solution to the equivalence problem for hypersurface simple elliptic singularities, and also discusses the equivalence problem for a family of plane curve singularities $x^n + tx^{n-1}y + y^n = 0$ ($t \in \mathbb{C}$).

Reviewer: [Tomohiro Okuma \(Yamagata\)](#)

MSC:

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

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

Keywords:

[homogeneous singularity](#); [isolated hypersurface singularity](#); [simple elliptic singularity](#); [moduli algebra](#)