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Cusp singularities given by reflections of stellable cones. (English) Zbl 0756.14001
Int. J. Math. 2, No. 6, 635-657 (1991).

The author builds “Tsuchihashi cusps” [*H. Tsuchihashi*, *Tôhoku Math. J.*, II. Ser. 35, 607-639 (1983; [Zbl 0585.14004](#))] (this is a generalization of Hilbert modular cusp singularities). Such a singularity is defined by a pair (C, Γ) of an open convex cone $C \subset \mathbb{R}^n$ and a discrete group $\Gamma \subset GL(n, \mathbb{Z})$ with good conditions. The author defines and studies the notion of “semi-integral stellable polyhedral cones” C , the group Γ generated by the reflections with respect to the facets of such a C gives rise to a good pair (C, Γ) . There is a duality among stellable cones, the corresponding singularities are dual in the sense of Tsuchihashi [loc. cit.].

At the end, the author gives effective examples of his singularities and computes the arithmetic genus default χ_∞ and the Ogata zeta zero $Z(0)$ and verifies on his examples the Ogata-Satake conjecture: the χ_∞ of a cusp is equal to the $Z(0)$ of its dual. A proof of this conjecture is announced as forthcoming.

[See also: *E. B. Vinberg*, *Math. USSR, Izv.* 5(1971), 1083-1119 (1972); translation from *Izv. Akad. Nauk SSSR, Ser. Mat.* 35, 1072-1112 (1971; [Zbl 0247.20054](#)) and *T. Satake* and *S. Ogata*, in *Automorphic forms and geometry of arithmetic varieties*, *Adv. Stud. Pure Math.* 15, 1-27 (1989; [Zbl 0712.14009](#))].

Reviewer: [V.Cossart \(Versailles\)](#)

MSC:

- [14B05](#) Singularities in algebraic geometry
- [14G10](#) Zeta functions and related questions in algebraic geometry (e.g., Birch-Swinnerton-Dyer conjecture)
- [14E15](#) Global theory and resolution of singularities (algebro-geometric aspects)

Cited in **2** Documents

Keywords:

[Tsuchihashi cusps](#); [arithmetic genus default](#); [zeta zero](#)

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