

Veys, Willem**The topological zeta function associated to a function on a normal surface germ.** (English)

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Topology 38, No. 2, 439-456 (1999).

To each complex polynomial f *J. Denef* and *F. Loeser* [*J. Am. Math. Soc.* 5, No. 4, 705-720 (1992; Zbl 0777.32017)] associated a series of topological zeta functions (one for each $d \in \mathbb{N}$), defined in terms of the embedded resolution of $f^{-1}(0)$. An analogous formula can be written for any function f on a normal surface germ $(S, 0)$. The author extends his previous results for the case S smooth to this setting. In particular, he gives a formula for the zeta functions in terms of the log-canonical model of the pair (S, f) . An example shows that the Monodromy Conjecture does not hold in this case: there exist poles which are not logarithms of eigenvalues of some local monodromy. But the holomorphy conjecture is proved here: if d does not divide the order of any eigenvalue, then the d -th zeta function vanishes.

In the final section the author generalises his zeta function to one with coefficients in a certain localisation of the Grothendieck of algebraic varieties, in the spirit of *J. Denef* and *F. Loeser* ['Motivic Igusa zeta functions', *J. Algebraic Geom.* 7 (1998)].

Reviewer: [J.Stevens](#) (Göteborg)**MSC:****32S40** Monodromy; relations with differential equations and D -modules (complex-analytic aspects)**14B05** Singularities in algebraic geometryCited in **1** Review
Cited in **8** Documents**Keywords:**

topological zeta functions; monodromy conjecture; holomorphy conjecture

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