

# Computing the Complement to the Amoeba of a Multivariate Polynomial

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We propose a method for computing and visualizing the amoeba of a Laurent polynomial in several complex variables, which is applicable in arbitrary dimension. The algorithms developed based on this method are implemented as a free web service (<http://amoebas.ru>) which enables interactive computation of amoebas of bivariate polynomials and provides a set of precomputed amoebas and their cross-sections in higher dimensions. The correctness and running time of the proposed algorithms are tested against a set of optimal polynomials in two, three, and four variables, which are generated by means of Mathematica computer algebra system. The developed program code makes it possible, in particular, to generate optimal hypergeometric polynomials in an arbitrary number of variables supported in an arbitrary zonotope given by a set of generating vectors. The talk is based on a joint work with T.Zhukov.

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