

## Study of Voronoi diagrams with means of stochastics

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The purpose of this work is to present a special birth process of Voronoi cells. In one- and two-dimensional space the points with integer coordinates of a bounded domain are taken and they become active step by step according to given rules, creating Voronoi cells. The size of a cell is defined as the number of points contained and the size distribution of the Voronoi cells is studied. After the definition of the special birth process and the resulting Voronoi cells the process is simulated and the cells sizes are analyzed. With the maximum likelihood method the parameters of three distributions are computed for the data, from these parameters the mean and variance is estimated and then  $z$ - and  $t$ -tests are used to test if the obtained values fit the original data. After a number of computer simulations the gamma distribution is proposed as the most suitable approximation for the cell-size distribution.

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