

The past few years have seen advances in modelling of polycrystalline materials using parametric tessellation models from stochastic geometry. A promising class of tessellations, the Gibbs-type tessellation, allows the user to specify a great variety of properties through the energy function. This text focuses solely on tetrahedrizations, a three-dimensional tessellation composed of tetrahedra. The existing results for two-dimensional Delaunay triangulations are extended to the case of three-dimensional Laguerre tetrahedrization. We provide a proof of existence, a C++ implementation of the MCMC simulation and estimation of the models parameters through maximum pseudolikelihood.