

Variations and Applications of Voronoi's Algorithm

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In this talk we give a short introduction to Voronoi's algorithm, which was classically used for a reduction theory of positive definite quadratic forms. We then discuss some generalizations and possible applications. We in particular describe an adaption of Voronoi's algorithm allowing to compute a certificate for the (non-)copositivity of a given quadratic form. This yields a new application of Voronoi's classical theory to the comparatively recent field of Copositive Optimization.

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