明治大学先端数理科学インスティテュート

MIMS現象数理カフェセミナー

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Spherical Laguerre Voronoi Diagram as a Tool for Fitting Real World Tessellations

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Abstract： Recently, we proposed a method for fitting real world tessellations, spike-containing objects, using spherical Voronoi diagram and spherical Laguerre Voronoi diagram (SLVD). From the SLVD fitting experiments using ideal data, it leads to the theoretical study of the properties of a polyhedron corresponding to the SLVD. Using those properties, we can solve the SLVD recognition problem, the judgment whether or not the given convex spherical tessellation is SLVD. We finally apply the recognition algorithm to find the best-fitting SLVD to the given spherical tessellation when generators are not included explicitly in the tessellation, which is a generalization of the spike-containing objects. We are now doing the experiments using sugar apple and raspberry photographic images.

This works is supervised by Prof. Kokichi Sugihara.

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