

# 2D VORONOI TESSELLATION OF CURVED CHANNEL GEOMETRIES

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## **Abstract**

The subject of the work is to generate Voronoi tessellations for curved channel geometries. A concave polygon represents the input geometry of the channel. The work shows a way to create the initial Delaunay triangulation of the polygon with the algorithm of Lawson with  $O(n^2)$  operations. Quality requirements of the triangulation are guaranteed by using Rupperts Delaunay refinement algorithm which refines the triangulation in  $O(n^2)$  operations. The Voronoi tessellation is calculated from the refined Delaunay triangulation.

An analysis of triangulation and tessellation quality is performed – quality criteria are introduced.