TECHNICAL REPORT:

The Delaunay Surface Remeshing Module in *ChiTech*

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1   Fundamental Mission

The notion of a `region` as used in STAR-CCM+ is a powerful way to build meshes because it transcends the notion of a "component" or even a "part" and allows contiguous components to have the same properties or, alternatively, for a single part to be decomposed into different regions. In ChiTech the ultimate goal is to define regions by `surface meshes` that were developed by a well known graphics package called Blender [1].

In two dimensional space the concept of regions can easily be accomplished with blender by using boolean functions to derive different regions.

References

[1] *Blender - a 3D modelling and rendering package*, Blender Online Community, Blender Foundation, Blender Institute, Amsterdam, 2018

[2] Cheng et al, *Delaunay Mesh Generation*, Chapman & Hall/CRC Computer & Information Science Series, 2013