intrinSIM

CONNECTING WORLDWIDE BUSINESS & TECHNOLOGY

7/21/16

MeshGems 2.3 version update

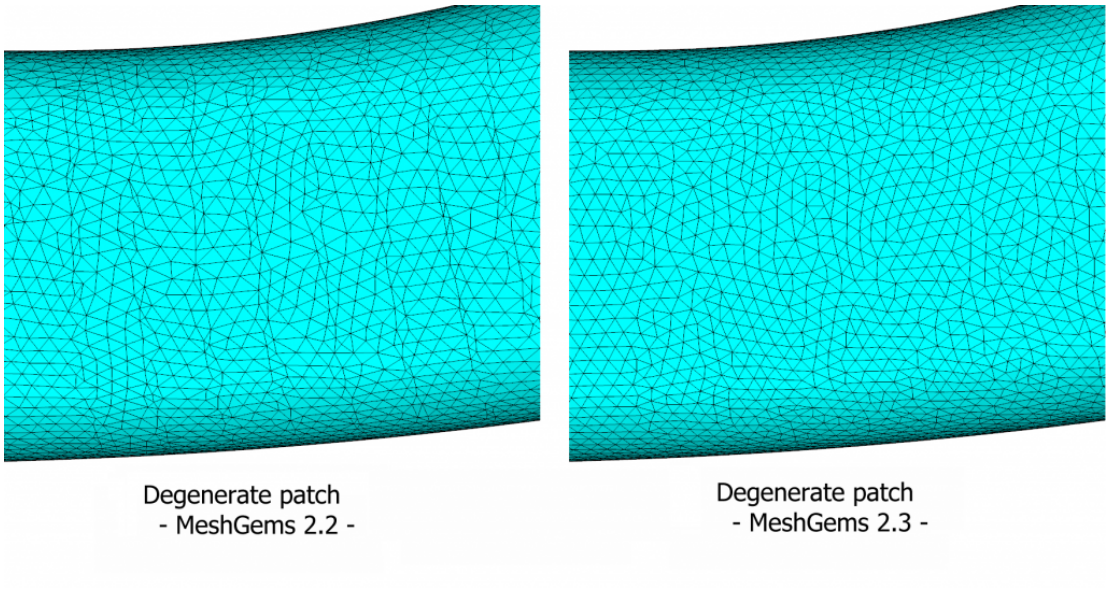
The most noticeable new features are the following :

MeshGems Infrastructure

- **New Features**
  - Thread safety of the whole MeshGems suite: the MeshGems library can now be used in a multi-thread calling environment. This means you can have simultaneous meshing sessions, organize your own parallel scheduling, and so forth.

Surface Meshing – *MeshGems-CADSurf*

- **New Features**
  - Possibility to specify required quadrilaterals to be preserved in the generated mesh when meshing on a discrete CAD.
  - Chordal error control supported when using the anisotropic metric mode.
- **Improvements**
  - Full re-design of the triangular mesher, providing more reliability, speed, memory efficiency and better meshes around local parametrization degeneracies (see picture below). It also makes future evolutions much easier. NB: the generated meshes may look slightly different.



Mesh processing – *MeshGems-SurfOpt & Cleaner*

- **New Features**
  - MG-SurfOpt and MG-Cleaner: new parameters to respectively disable edge swaps and detach single contacts between two surfaces.
- **Improvements**
  - MeshGems-Cleaner: better volume detection.

Volume Meshing – *MeshGems-Hybrid*

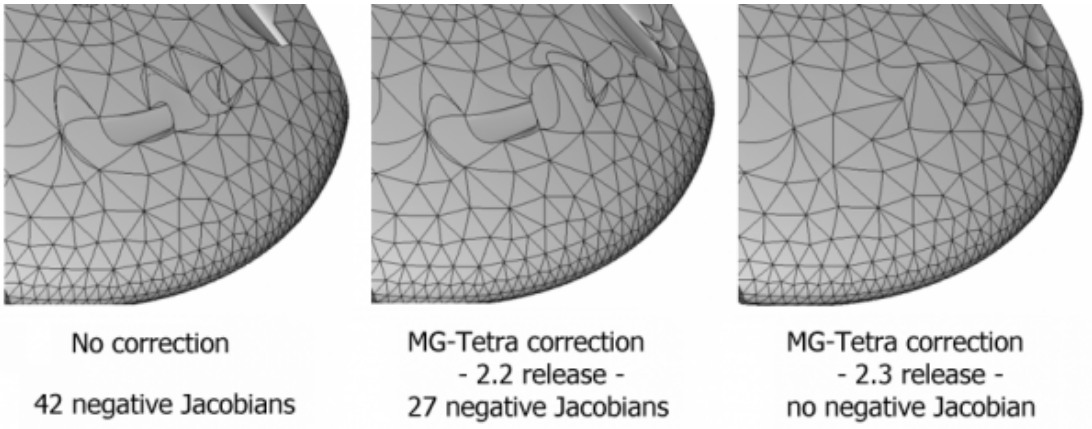
- **New Features**
  - Boundary layer imprinting on symmetry planes or planar inlets/outlets.
- **Improvements**
  - Better treatment of the proximity between opposite surfaces for the generation of pyramids: it leads to better mesh qualities in thin regions when using a cartesian core. The subdomains or holes are now better taken into account.
  - Computation of the boundary layer vertices in complex corner situations substantially improved.

Volume Meshing – *MeshGems-Hexa*

- **New Features**
  - Ability to specify the boundary layer parameters on a tag per tag basis.

Surface + Volume Meshing

- **Improvements**
  - Improved quadratic Surface + Volume meshing workflow in *MeshGems-CADSurf* and *MeshGems-Tetra*.



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Until next time,

Joe Walsh
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