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# Remeshing Plugin

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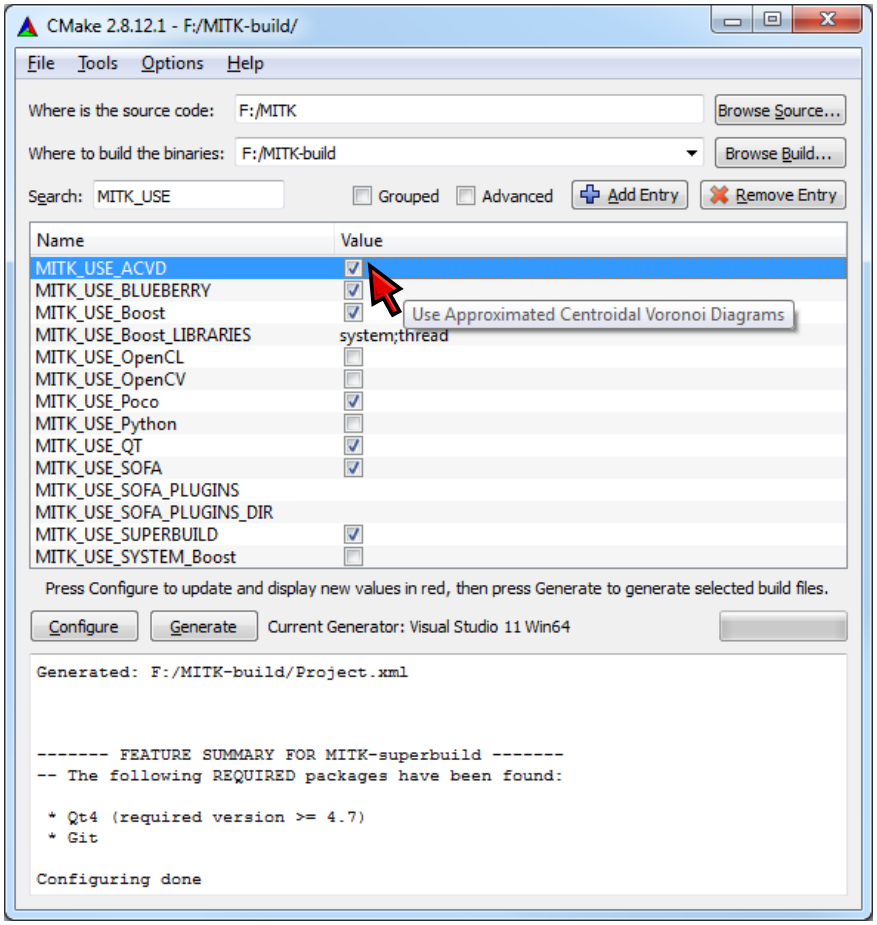
# MITK Superbuild Configuration



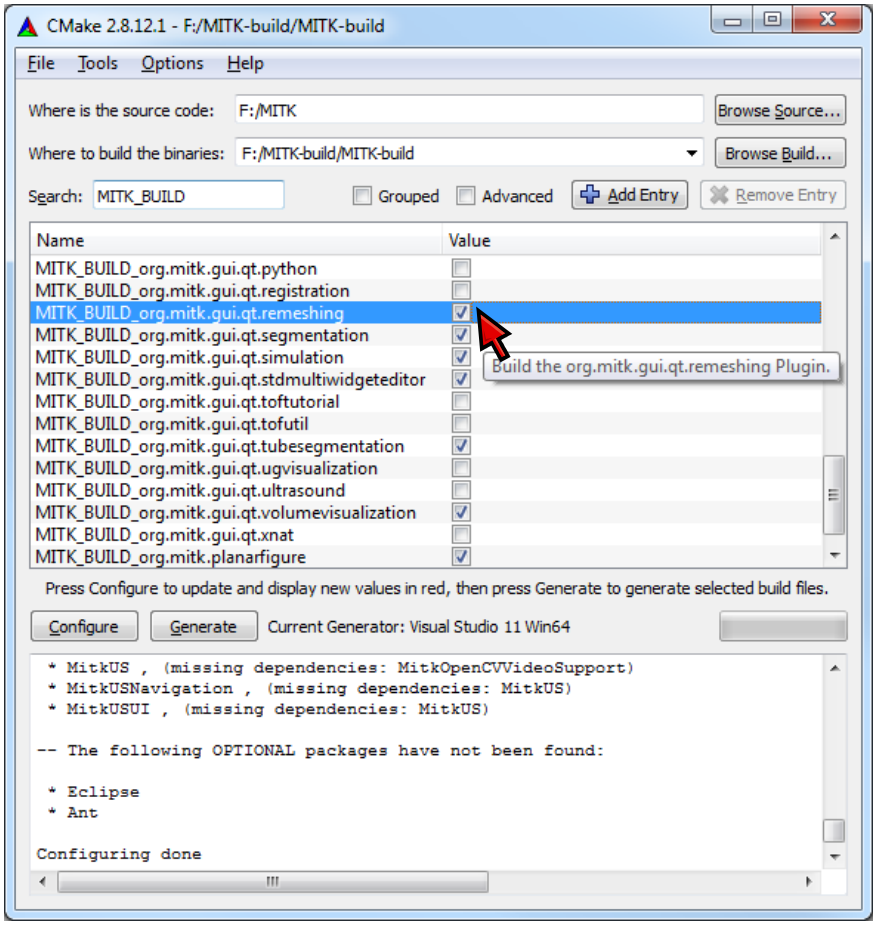
- Switch on *MITK_USE_ACVD*



# MITK Build Configuration



- Switch on *MITK_BUILD_org.mitk.gui.qt.**remeshing***

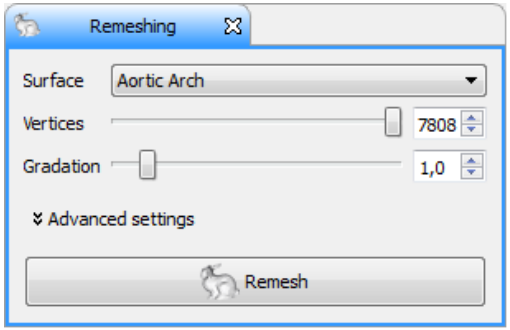


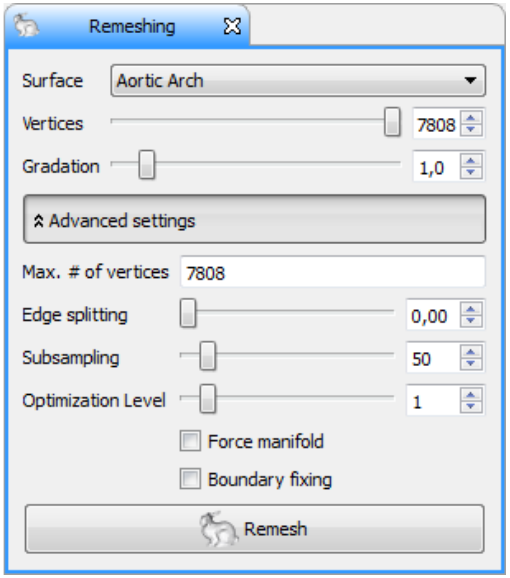
# Remeshing Plugin



- Icon

- View (basic and advanced mode)



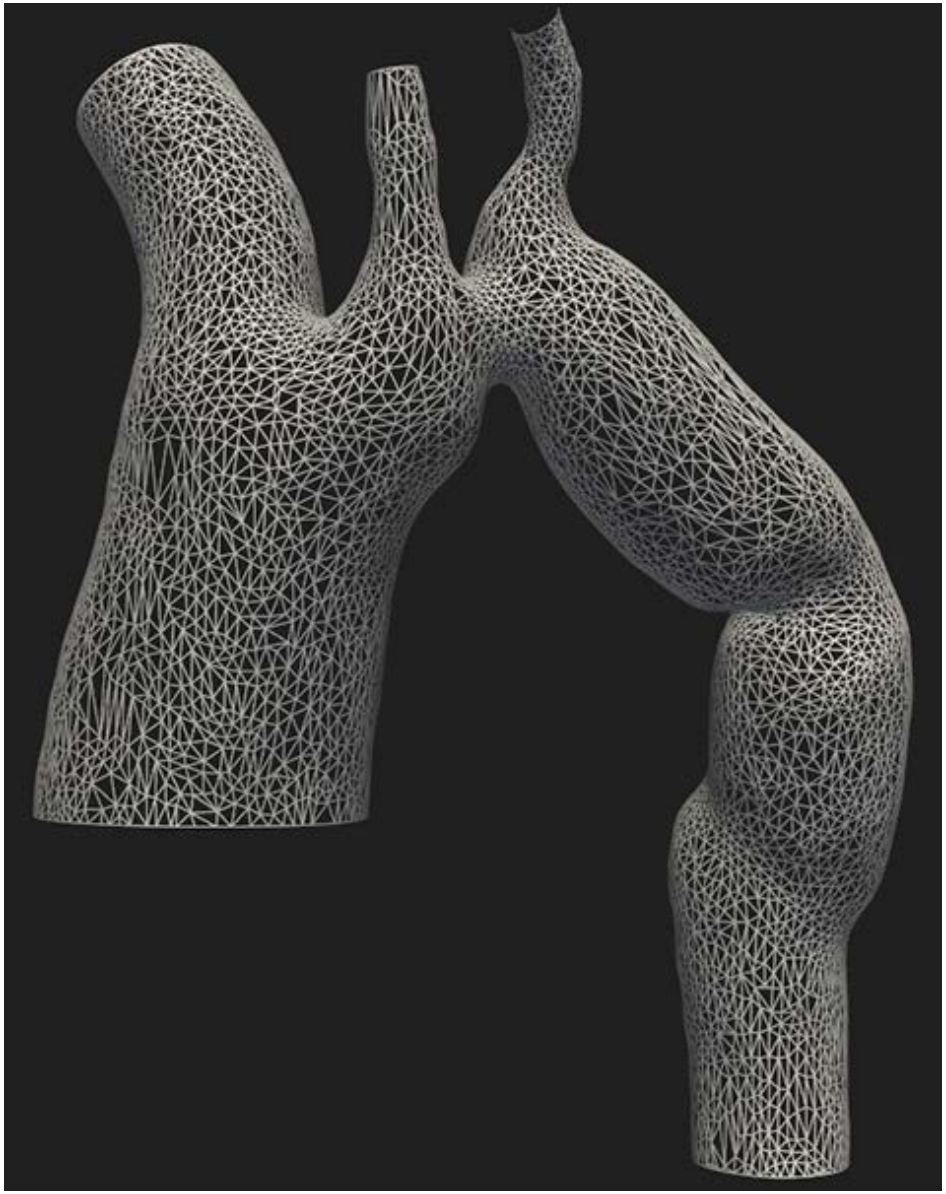
# Basic Settings



- **Vertices**
  - # of vertices of the *remeshed* surface
    - Exact as long as **Boundary fixing** is off (default)
  - Max. # of vertices is limited to *input* surface vertex count
    - Limit can be increased by **Max. # of vertices** setting
- **Gradation**
  - Affects distribution of vertices on *remeshed* surface
    - 0 → Equal distribution
    - > 0 → More vertices in high curvature areas, less in low curvature areas
      - 1 → Smooth transition of vertex distributions
      - > 1 → More abrupt transition of vertex distributions

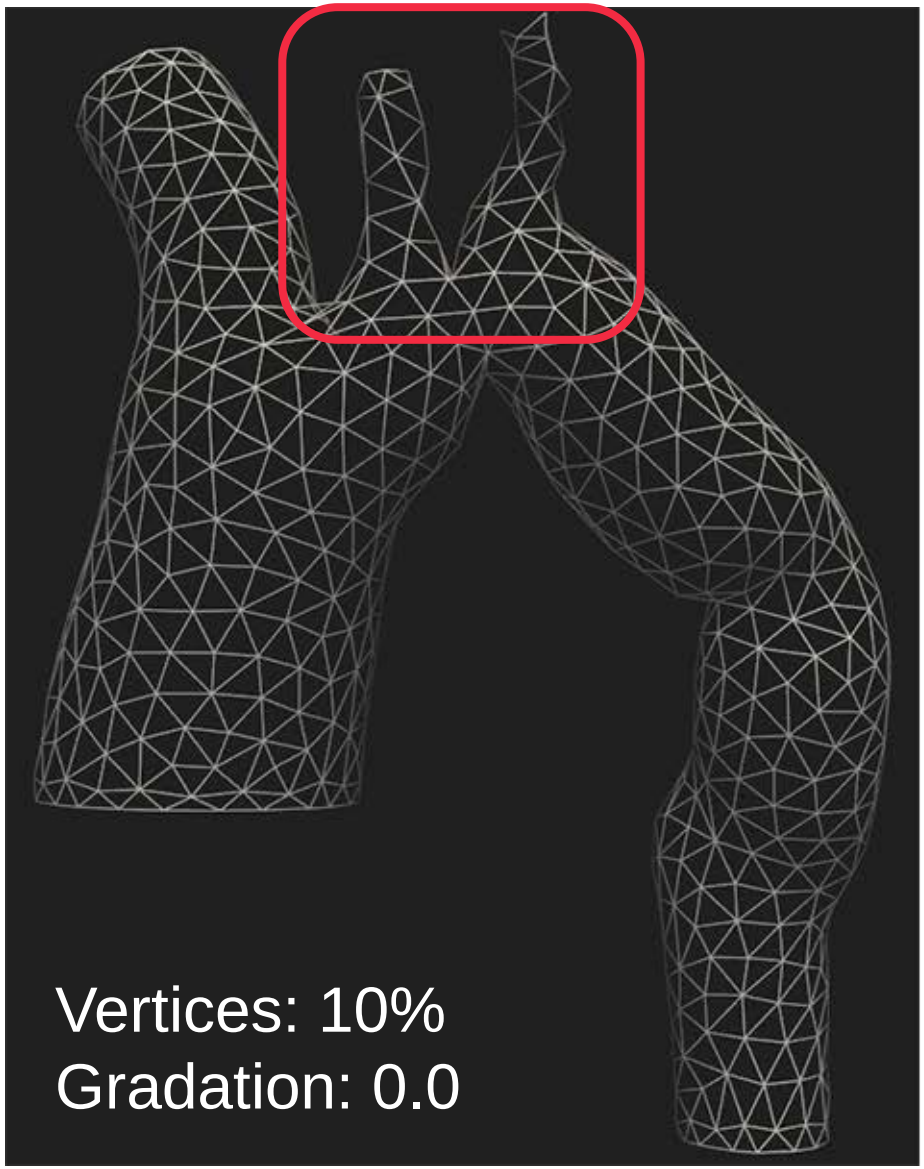
# Example #1 – Input Surface

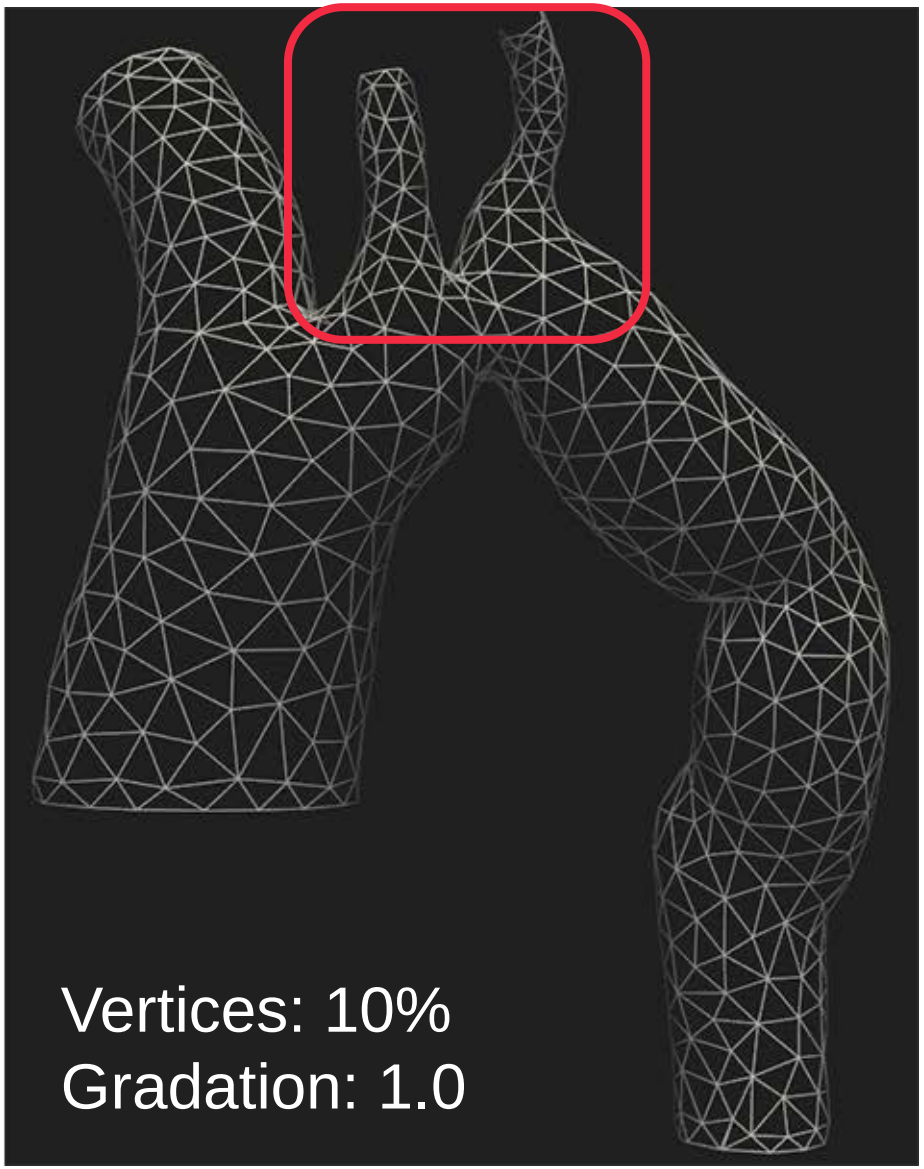




# Example #1 – Basic Settings





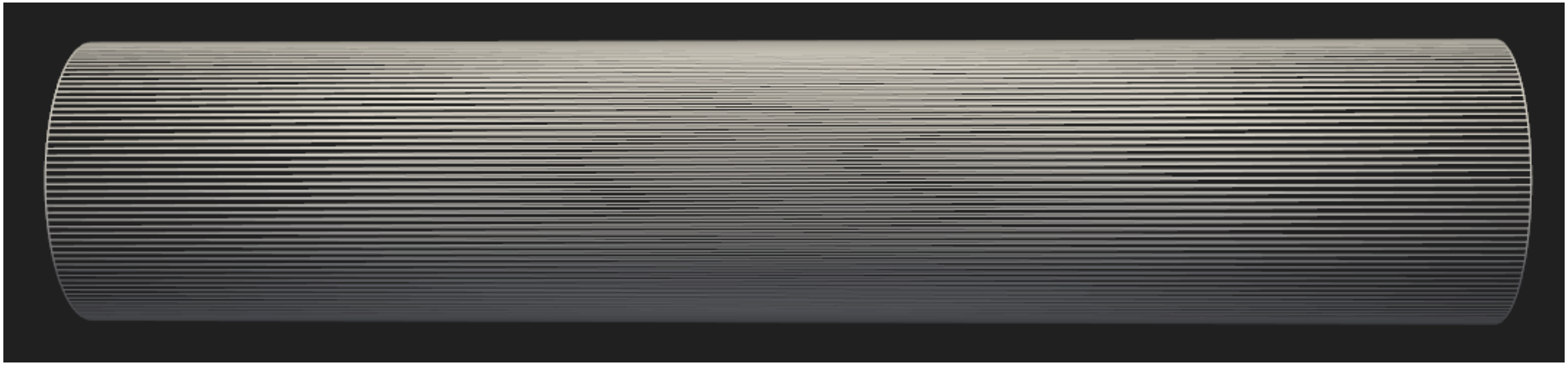
# Advanced Settings



- **Max. # of vertices**
  - Set max. adjustable # of vertices
  - Use if you want to increase vertex count of your surface
- **Edge splitting**
  - Long edges are split recursively until all edges satisfy theshold
    - Threshold = setting * average edge length of *input* surface
  - Takes long time: Use only if *input* surface has long, thin polygons
- **Subsampling**
  - Trade quality of vertex distribution against computation time and RAM
  - *Input* surface is subdivided until total # of vertices exceeds initial vertex count times this setting
- **Boundary fixing**
  - Results in additional vertices at boundaries to keep their position

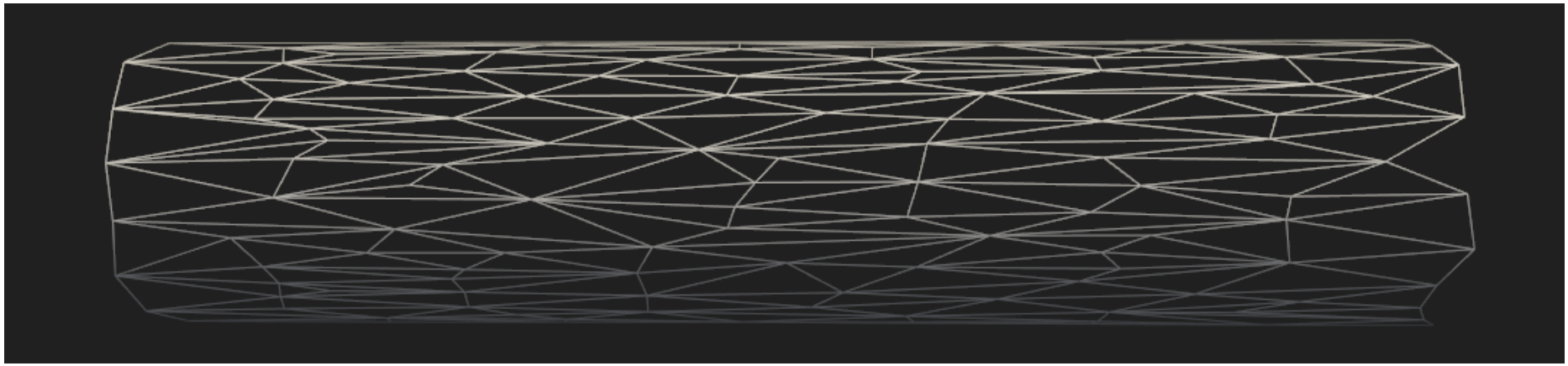
# Example #2 – Input Surface



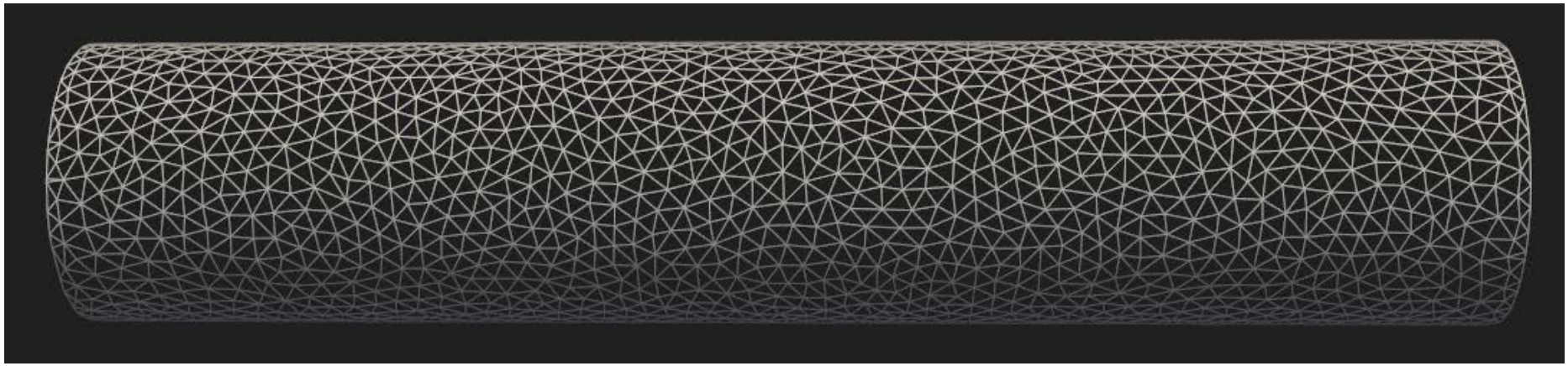


# Example #2 – Advanced Settings





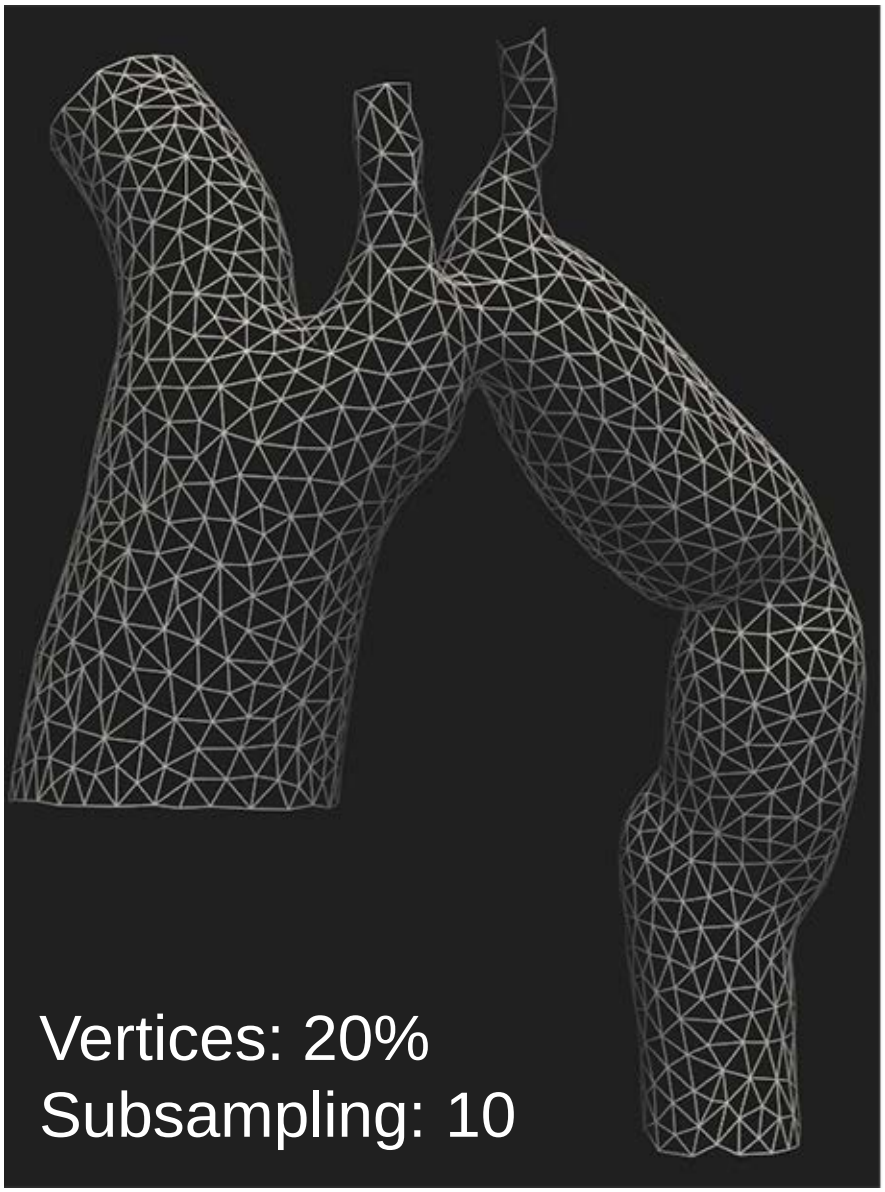
- Remeshing attempt w/o edge splitting and boundary fixing

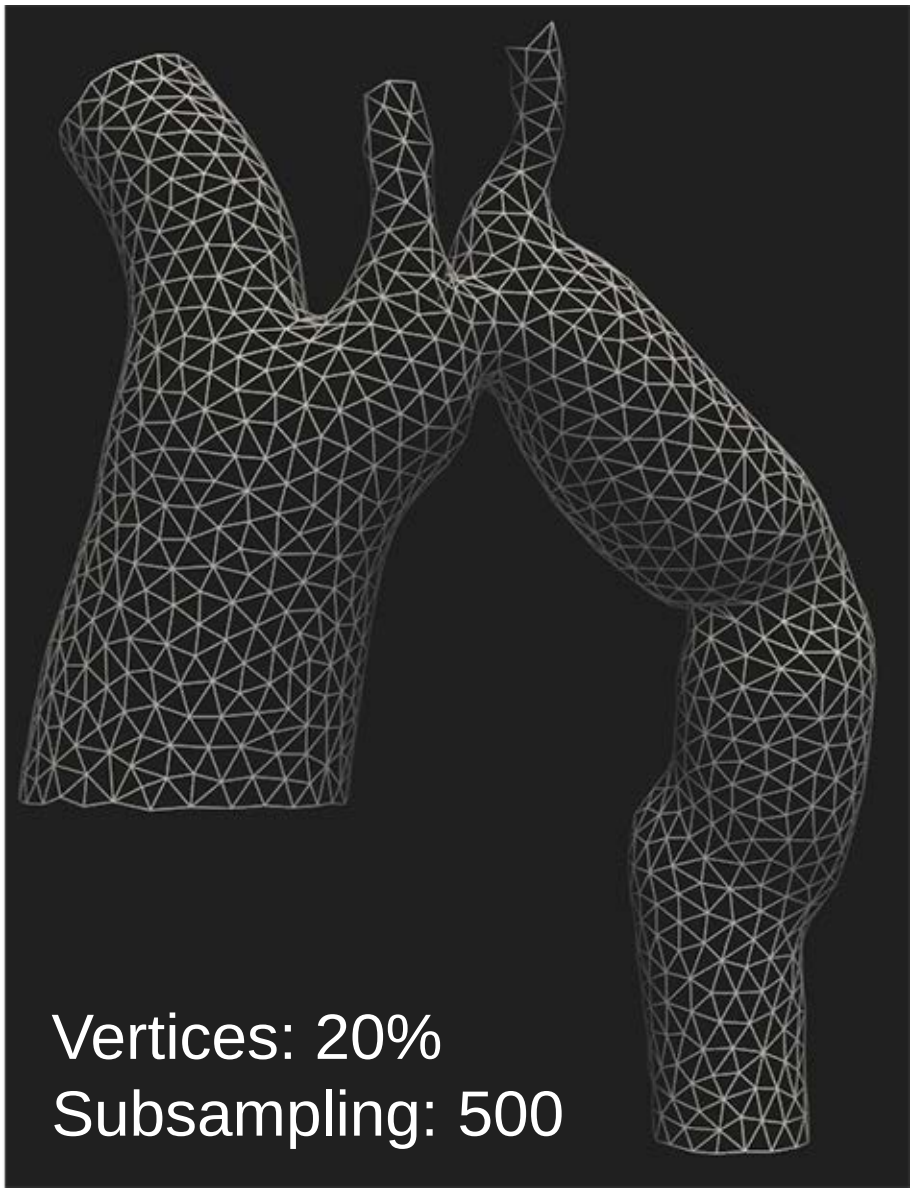


- Increased max. # of vertices, edge splitting, boundary fixing
- Second run w/o edge splitting

# Example #3 - Subsampling

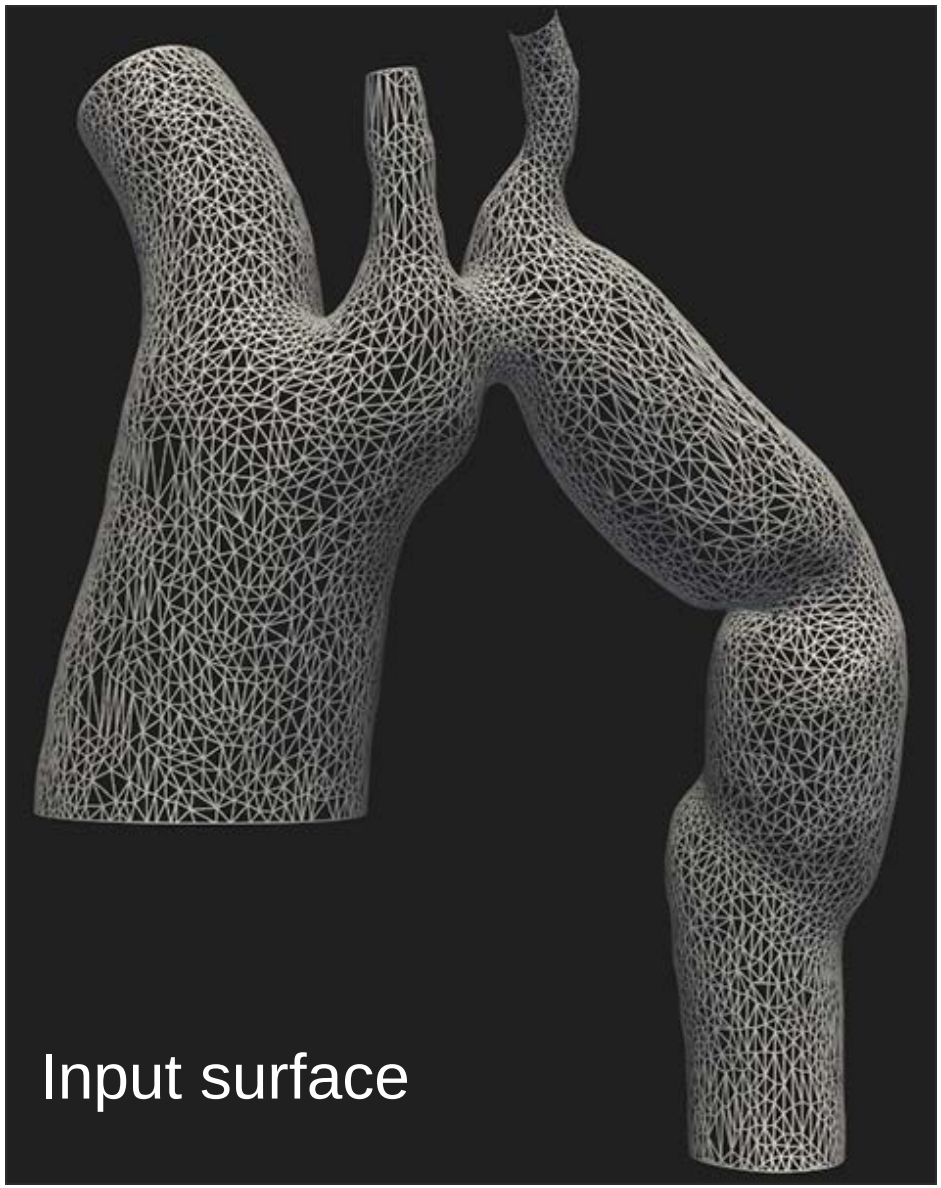


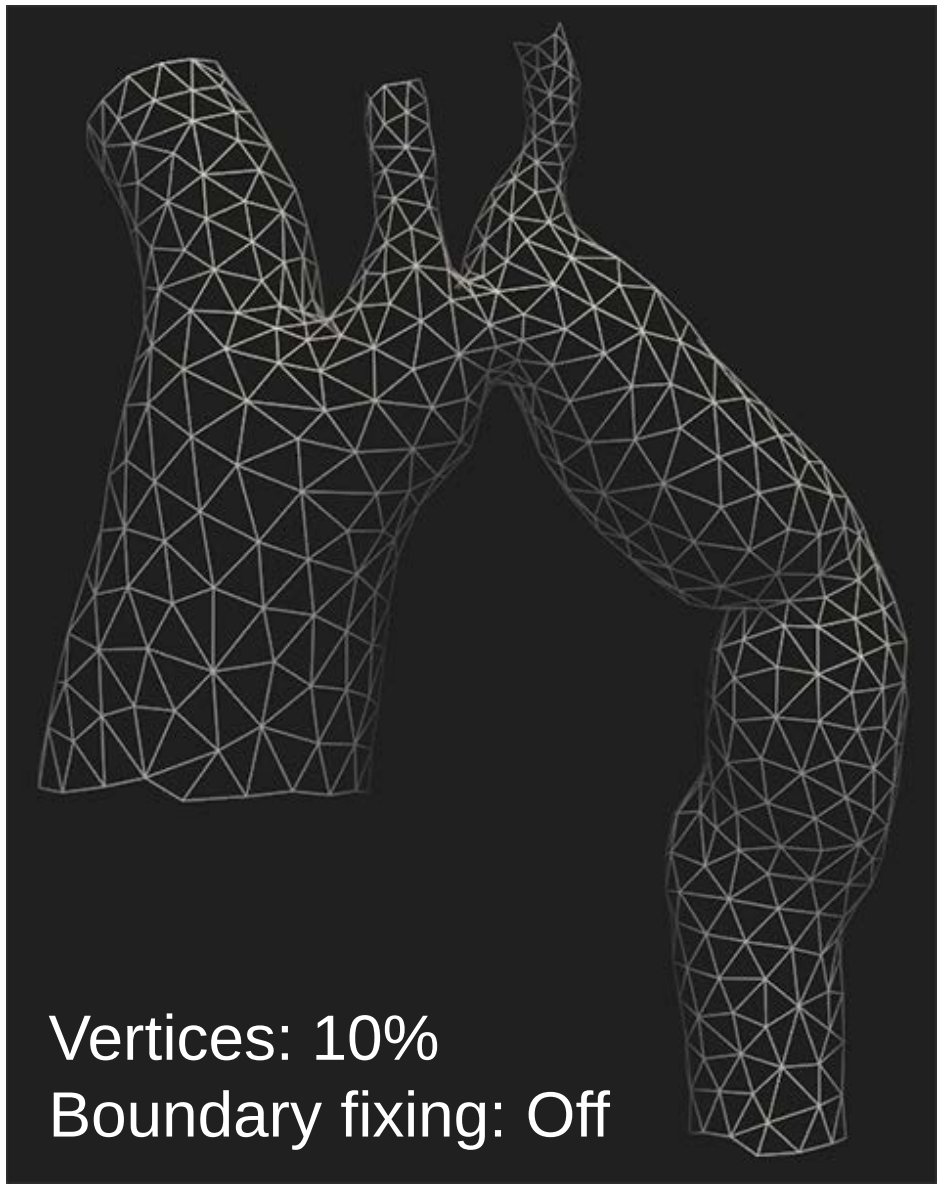


# Example #4 – Boundary fixing





# Pros & Cons



+ Build time of ACVD is very short (< 1 min)
+ Plugin has descriptive and illustrative help page (press F1)
+ High quality surface generation is very fast
+ Ultra high quality surface generation possible
+ Works with open and closed surfaces
+ Functionality available through function or filter

- Input surfaces with extreme polygon count hard to handle
- Only works for completely triangular surfaces


# Thank you for your attention!

**Further information on www.dkfz.de**

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