

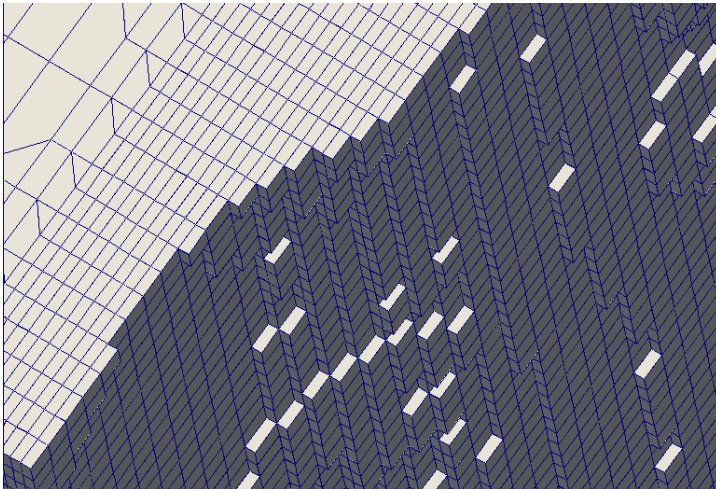
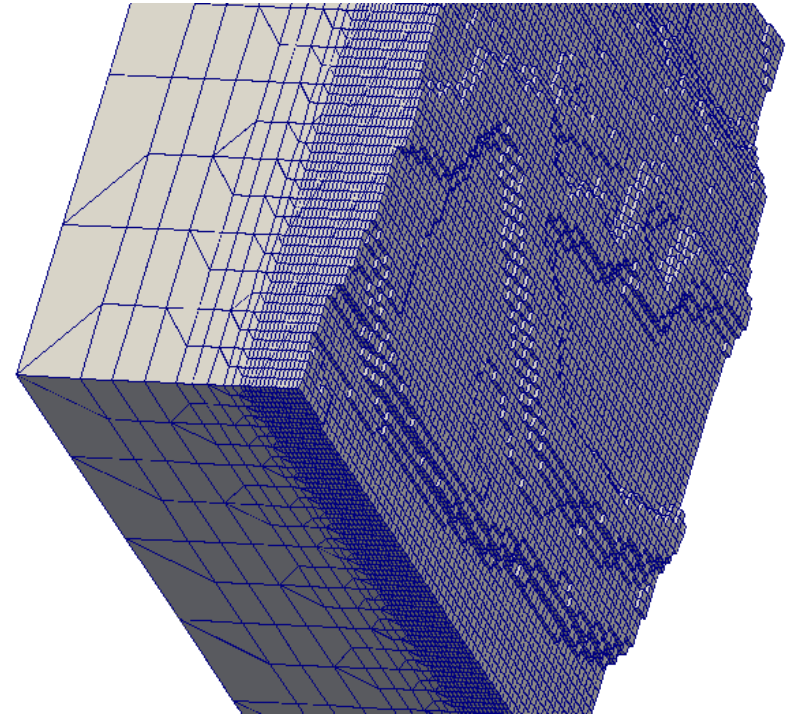
OpenFOAM course

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881217

Bases

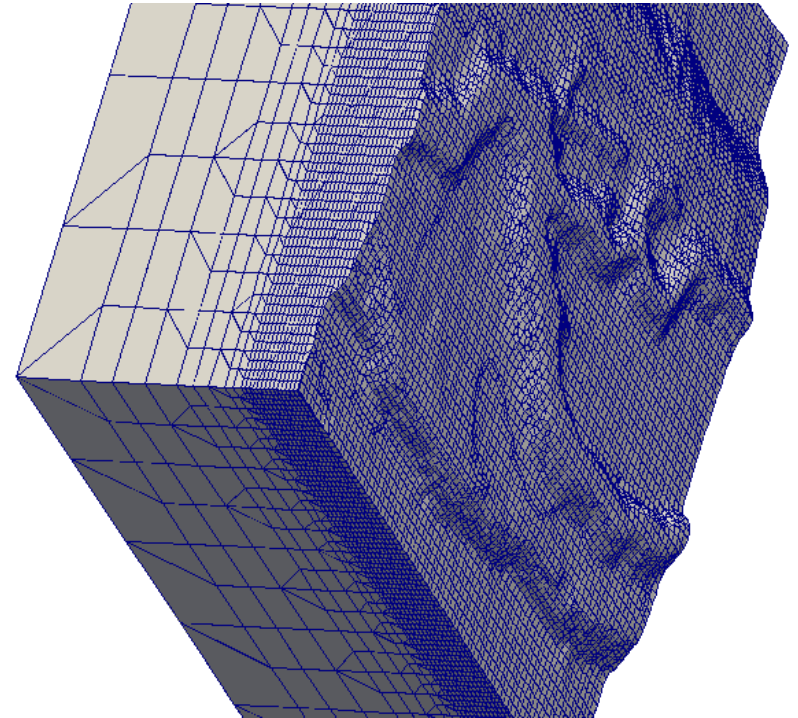
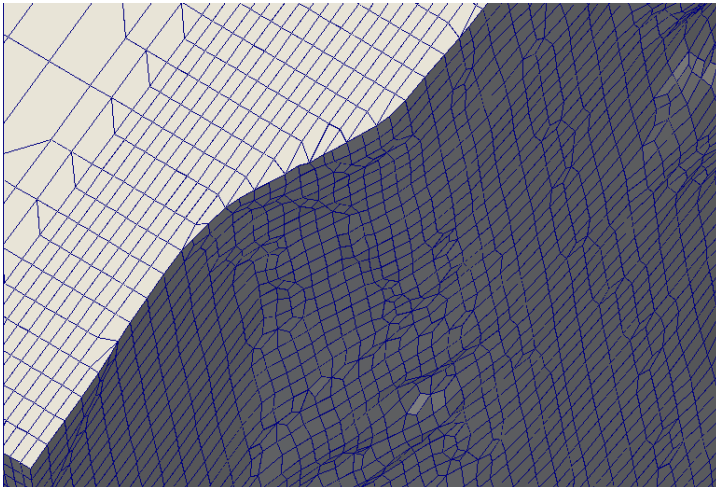
- snappyHexMesh
- refineMesh
- moveDynamicMesh
- refineWallLayer



- Castellated Mesh
- Mesh Snapping
- Boundary layer additions

Bases

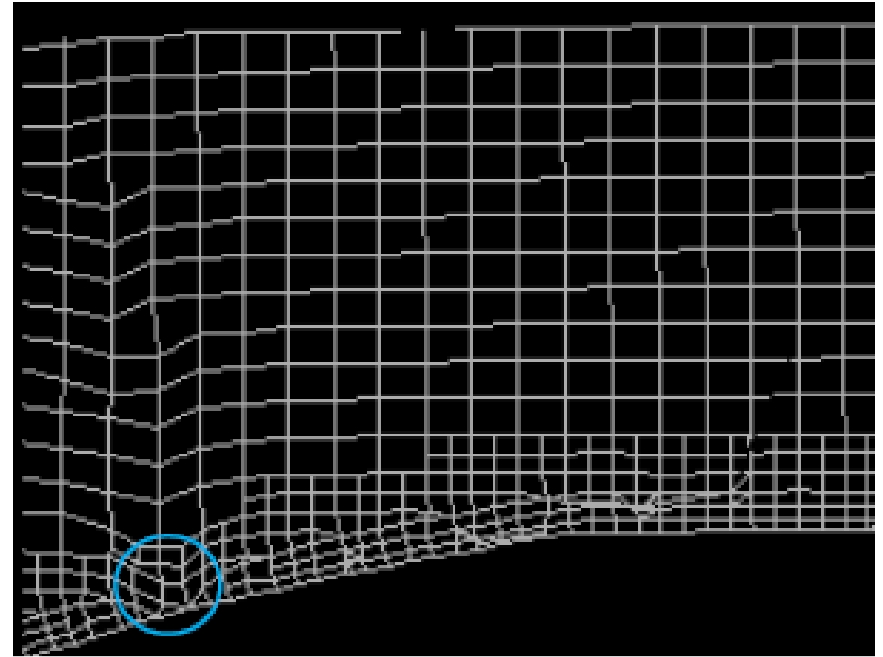
- **snappyHexMesh**
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- Casterllated Mesh
- **Mesh Snapping**
- Boundary layer additions

Bases

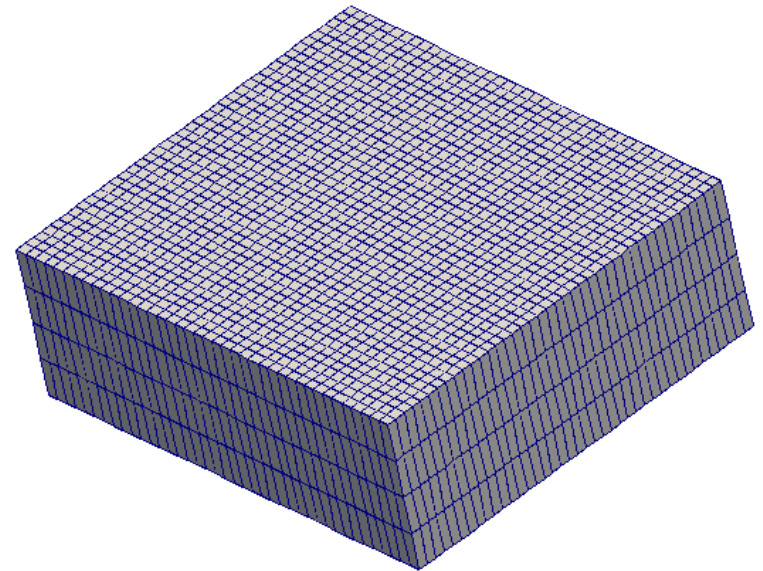
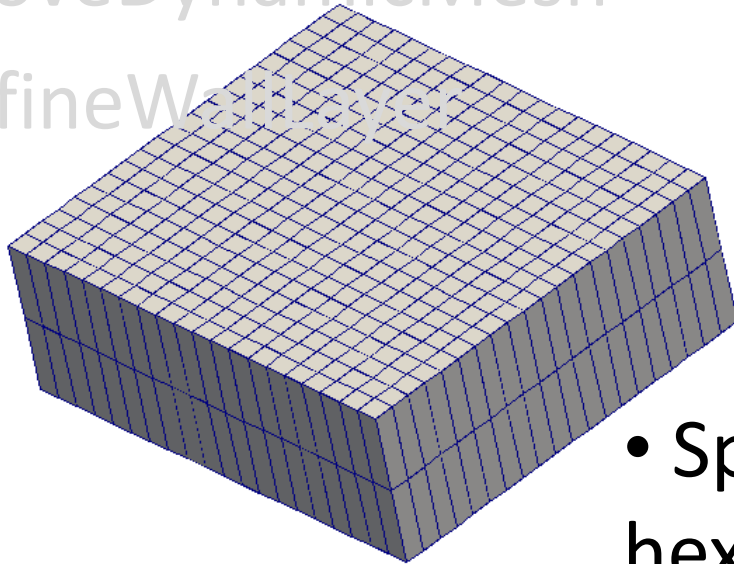
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- Casterllated Mesh
- Mesh Snapping
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Bases

- snappyHexMesh
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- Splits 1 hexagon to 8 hexagons (splits cell in center)

Bases

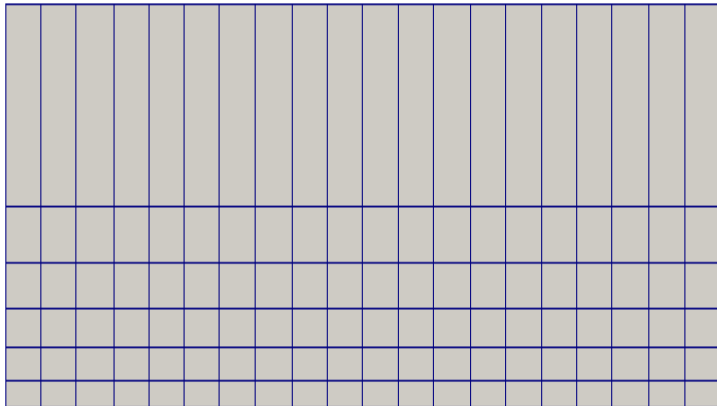
- snappyHexMesh
- refineMesh
- moveDynamicMesh
- refineWallLayer
- linearValveFvMesh
- mixerFvMesh
- **dynamic**
MotionSolverFvMesh
- Utilities
- Solvers
- Diffusivity

Bases

- snappyHexMesh
- refineMesh
- moveDynamicMesh
- refineWallLayer
- displacementLaplacian
- **velocityLaplacian**
- Utilities
- Solvers
- Diffusivity

Bases

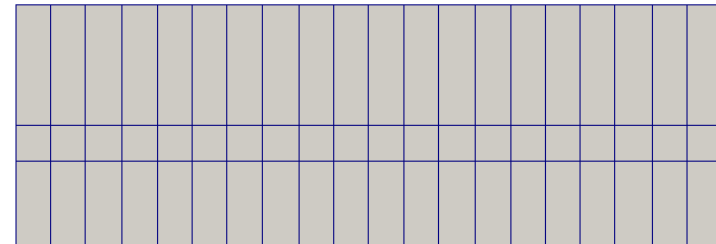
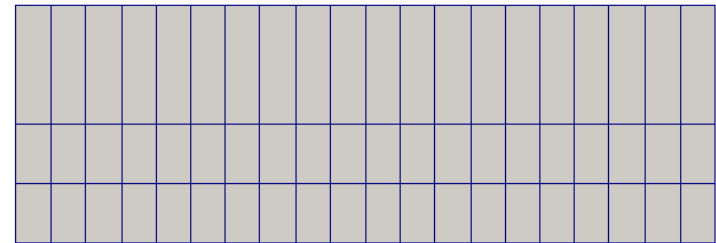
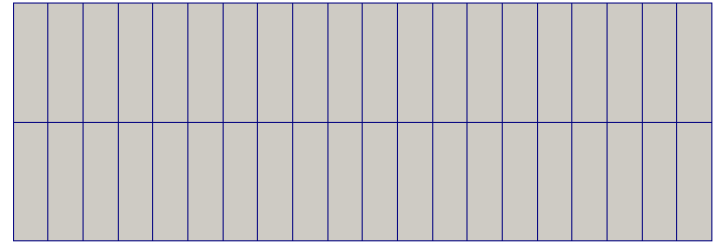
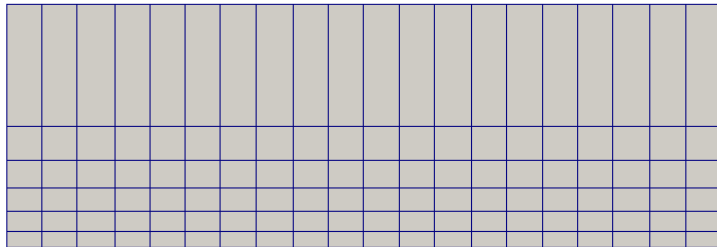
- snappyHexMesh
- refineMesh
- moveDynamicMesh
- refineWallLayer
- uniform
- directional (10 .10 1);
- **quadratic inverseDistance 1 (maxZ);**



- Utilities
- Solvers
- **Diffusivity**

Bases

- snappyHexMesh
- refineMesh
- moveDynamicMesh
- **refineWallLayer**



- **refineWallLayer**
<patchName> <weight>

mynappyHexMesh.C

Based on snappyHexMesh

Introduced 4 new utilities in snappyHexMesh

- The projection of the external mesh (boundary) on the surface.

- The refining of the mesh

- The movement of the internal mesh points

- And the creation of the boundary layer

mynappyHexMesh.C

- Projection
- Mesh Refinement
- Internal Mesh motion
- Boundary Wall Layers
 - Based on the snapping in snappyHexMesh
 - Starts with a coarse mesh
 - Which is then refined in the refining part, and then snapped again.

mynappyHexMesh.C

- Projection
- Mesh Refinement
- Internal Mesh motion
- Boundary Wall Layers
 - Based on the refining of refineMesh.C
 - Refines in all directions (by default)
 - Can with a refineMeshDict be edited to refine in 1 or 2.

mynappyHexMesh.C

- Projection
- Mesh Refinement
- Internal Mesh motion
- Boundary Wall Layers
 - Done by moveDynamicMesh
 - Moves the upper boundary with motionSolverFVMesh
 - Moves in a up- and down manner to keep the box size

mynappyHexMesh.C

- Projection
- Mesh Refinement
- Internal Mesh motion
- **Boundary Wall Layers**
 - Done by refineWallLayer

SnappyTestCase

Watch The results in paraFoam

SnappyTestCase

In every case where `mynsnappyHexMesh` is used a few files are needed and important.

- The `.stl` surface
- `blockMeshDict`
- `snappyHexMeshDict`
- `dynamicMeshDict`
- `pointMotionU`

SnappyTestCase

Let's check them out in the snappyTestCase folder!

mynappyHexMesh.C

Future Improvements:

- Create a new internal mesh motion feature for moveDynamicMesh.
- Fix some of the programming "shortcuts".
- Improve the Boundary layer creation.
- Overall improvements to efficiency of coding and results.

Thanks for listening!

Any Questions?