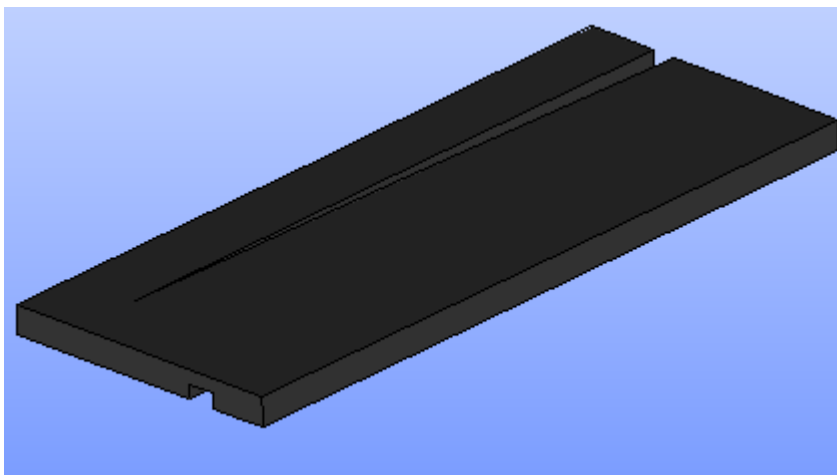


オープンCAE勉強会@富山

第9回 報告

～メッシュタイプの違いによる解析への影響～



秋山善克

Tetra

Checking geometry...

Overall domain bounding box (0 0 -0.05) (0.02 0.002 0)

Mesh (non-empty, non-wedge) directions (1 1 1)

Mesh (non-empty) directions (1 1 1)

Boundary openness (-3.43269e-16 6.70943e-15

3.68819e-18) OK.

Max cell openness = 2.61293e-16 OK.

Max aspect ratio = 4.64575 OK.

Minimum face area = 4.45017e-08. Maximum face area = 4.36202e-07. Face area magnitudes OK.

Min volume = 4.50083e-12. Max volume = 9.87722e-11.

Total volume = 1.82928e-06. Cell volumes OK.

Mesh non-orthogonality Max: 59.9823 average: 16.2099

Non-orthogonality check OK.

Face pyramids OK.

Max skewness = 0.659587 OK.

Coupled point location match (average 0) OK.

Mesh OK.

51step

Mesh computation succeed

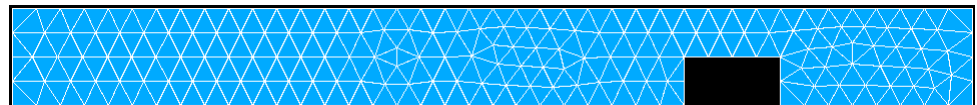
Compute mesh

Mesh_1

Mesh Infos

	Total	Linear	Quadratic
Nodes :	20303		
0D Elements :	0		
Balls :	0		
Edges :	1350	1350	0
Faces :	21638	21638	0
Triangles :	21638	21638	0
Quadrangles :	0	0	0
Polygons :	0		
Volumes :	87105	87105	0
Tetrahedrons :	87105	87105	0
Hexahedrons :	0	0	0
Pyramids :	0	0	0
Prisms :	0	0	0
Hexagonal prisms :	0		
Polyhedrons :	0		

Close



Tetra+layer

Checking geometry...

Overall domain bounding box (0 0 -0.05) (0.02 0.002 0)

Mesh (non-empty, non-wedge) directions (1 1 1)

Mesh (non-empty) directions (1 1 1)

Boundary openness (-2.34754e-16 -3.41483e-15 -1.70203e-17)

OK.

Max cell openness = 5.93583e-16 OK.

Max aspect ratio = 656.419 OK.

Minimum face area = 1.3838e-09. Maximum face area = 5.68505e-07. Face area magnitudes OK.

Min volume = 4.32267e-14. Max volume = 1.12906e-10. Total volume = 1.82929e-06. Cell volumes OK.

Mesh non-orthogonality Max: 91.3491 average: 21.1813

*Number of severely non-orthogonal faces: 223.

***Number of non-orthogonality errors: 1.

<<Writing 224 non-orthogonal faces to set nonOrthoFaces

***Error in face pyramids: 33 faces are incorrectly oriented.

<<Writing 33 faces with incorrect orientation to set

wrongOrientedFaces

***Max skewness = 68.1391, 5 highly skew faces detected which may impair the quality of the results

<<Writing 5 skew faces to set skewFaces

Coupled point location match (average 0) OK.

Failed 3 mesh checks.

Mesh computation succeed

Compute mesh

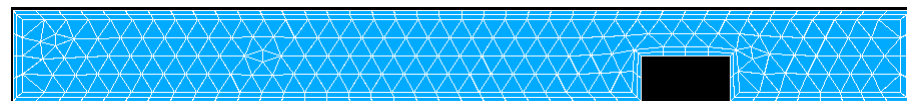
Mesh_1

Mesh Infos

	Total	Linear	Quadratic
Nodes :	34922		
0D Elements :	0		
Balls :	0		
Edges :	1350	1350	0
Faces :	21736	21736	0
Triangles :	21364	21364	0
Quadrangles :	372	372	0
Polygons :	0		
Volumes :	91331	91331	0
Tetrahedrons :	49791	49791	0
Hexahedrons :	0	0	0
Pyramids :	0	0	0
Prisms :	41540	41540	0
Hexagonal prisms :	0		
Polyhedrons :	0		

Close

642step



Hexa

Checking geometry...

Overall domain bounding box (0 0 -0.05) (0.02 0.002 0)

Mesh (non-empty, non-wedge) directions (1 1 1)

Mesh (non-empty) directions (1 1 1)

Boundary openness (2.93896e-17 5.15448e-16 -5.58119e-18)

OK.

Max cell openness = 1.95926e-16 OK.

Max aspect ratio = 9 OK.

Minumum face area = 1.25e-07. Maximum face area = 2.8125e-06. Face area magnitudes OK.

Min volume = 1.40625e-10. Max volume = 7.03125e-10. Total volume = 1.82928e-06. Cell volumes OK.

Mesh non-orthogonality Max: 1.75029 average: 0.459362

Non-orthogonality check OK.

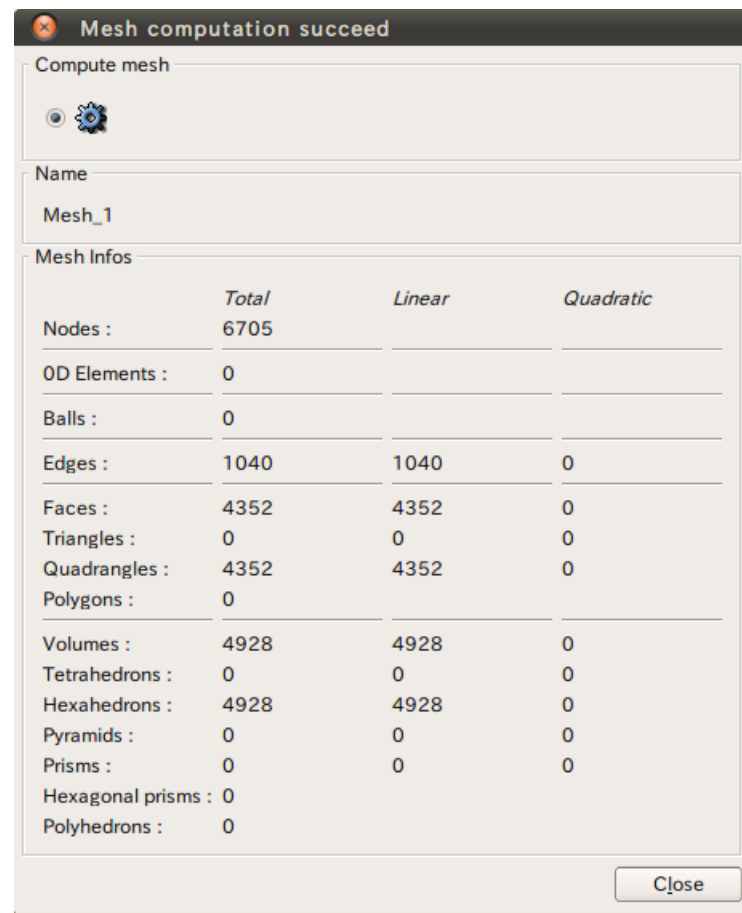
Face pyramids OK.

Max skewness = 0.0688818 OK.

Coupled point location match (average 0) OK.


Mesh OK.

34step



Mesh computation succeed

Compute mesh



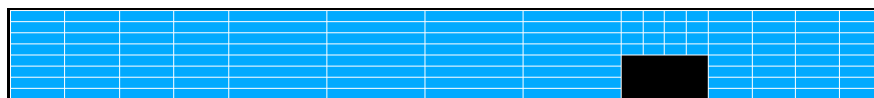
Name

Mesh_1

Mesh Infos

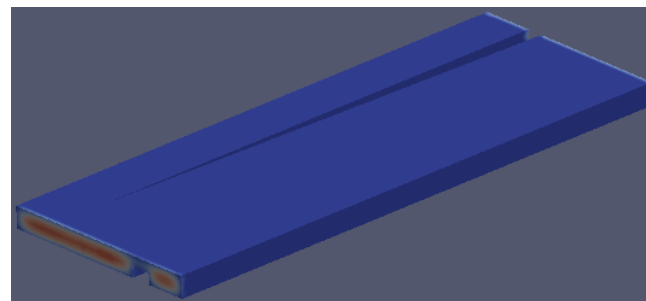
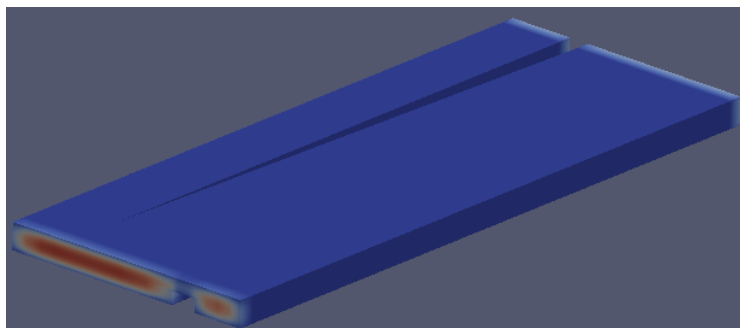
	Total	Linear	Quadratic
Nodes :	6705		
0D Elements :	0		
Balls :	0		
Edges :	1040	1040	0
Faces :	4352	4352	0
Triangles :	0	0	0
Quadrangles :	4352	4352	0
Polygons :	0		
Volumes :	4928	4928	0
Tetrahedrons :	0	0	0
Hexahedrons :	4928	4928	0
Pyramids :	0	0	0
Prisms :	0	0	0
Hexagonal prisms :	0		
Polyhedrons :	0		

Close

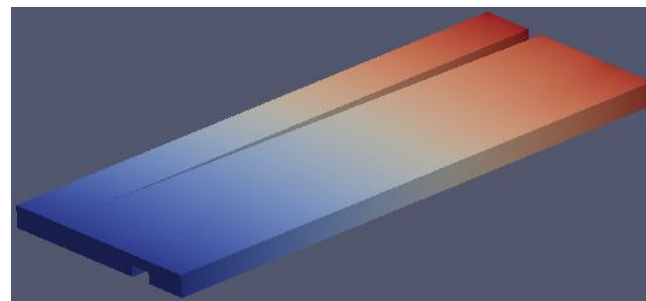
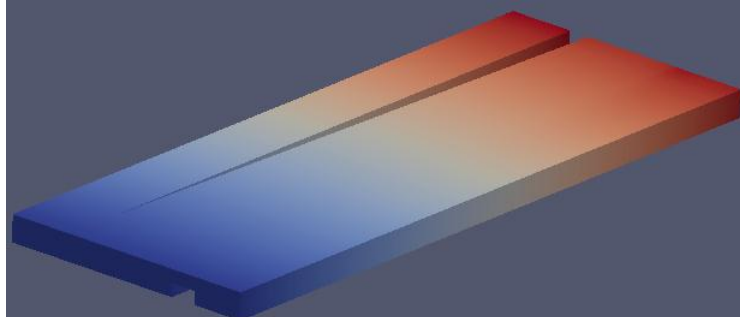


解析結果

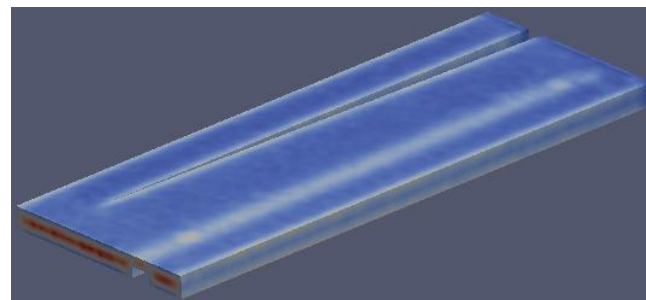
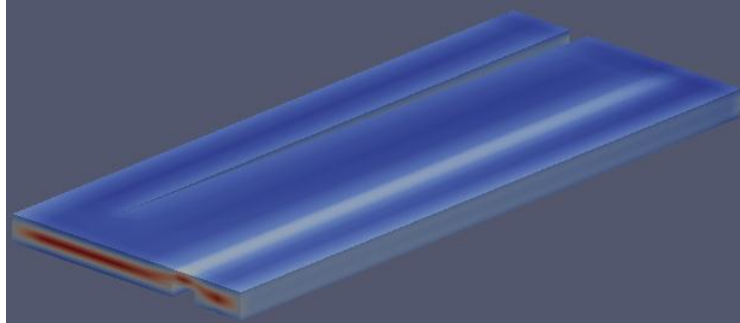
流速



压力



粘度



hexa

tetra