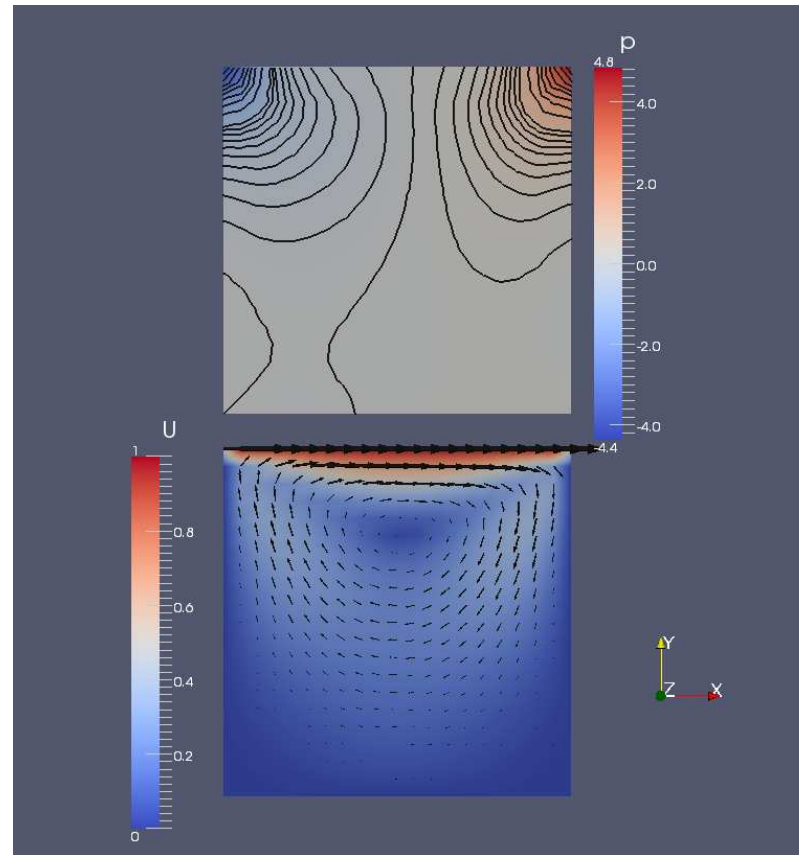


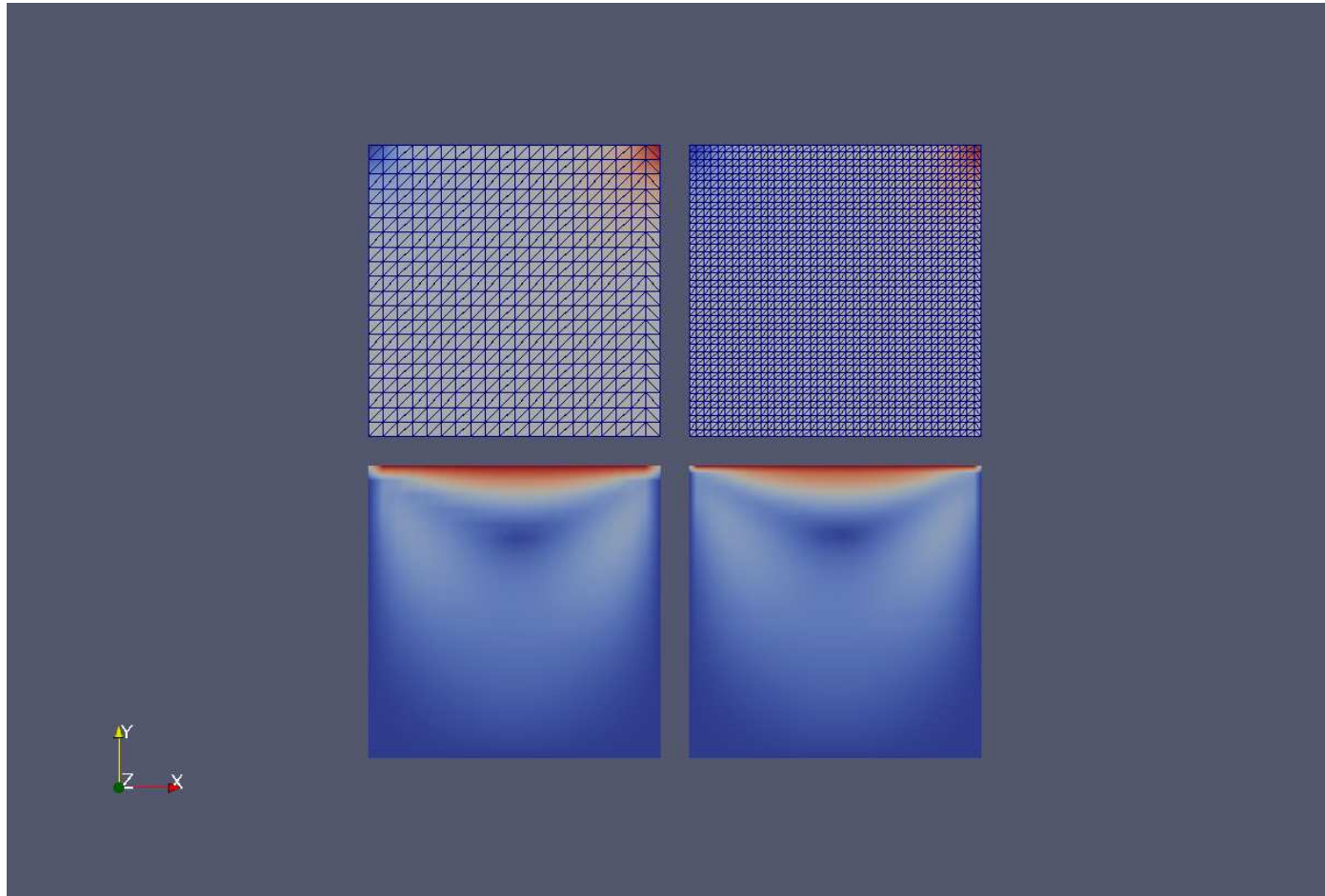
## IcoFoam: cavity



Top: Filter "Slice" and then "Contour" (pressure).

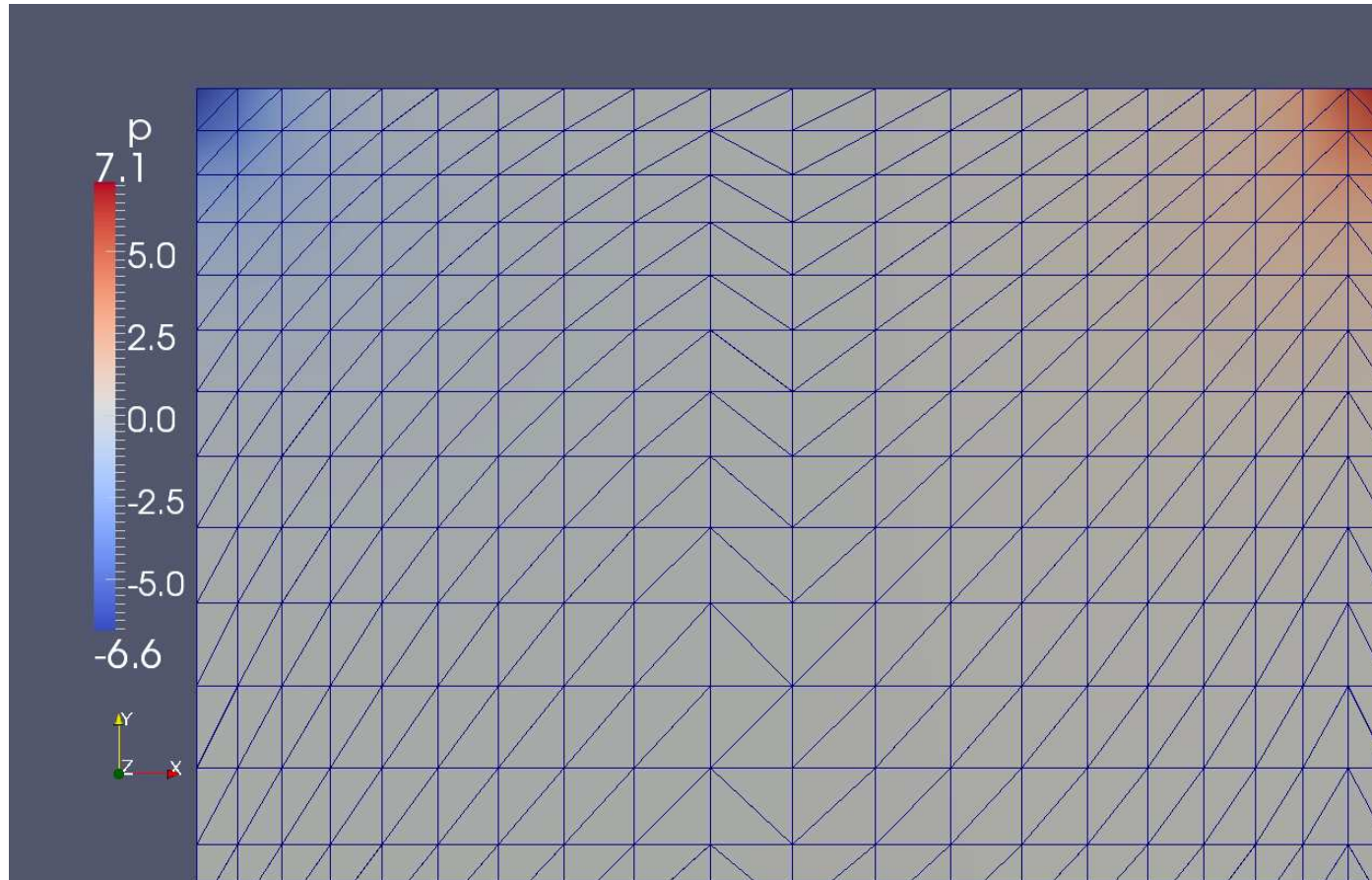
Bottom: copy of .OpenFOAM file, Filter "Transform" (translate), then "slice" and "glyph" (arrow).

## IcoFoam: cavityFine



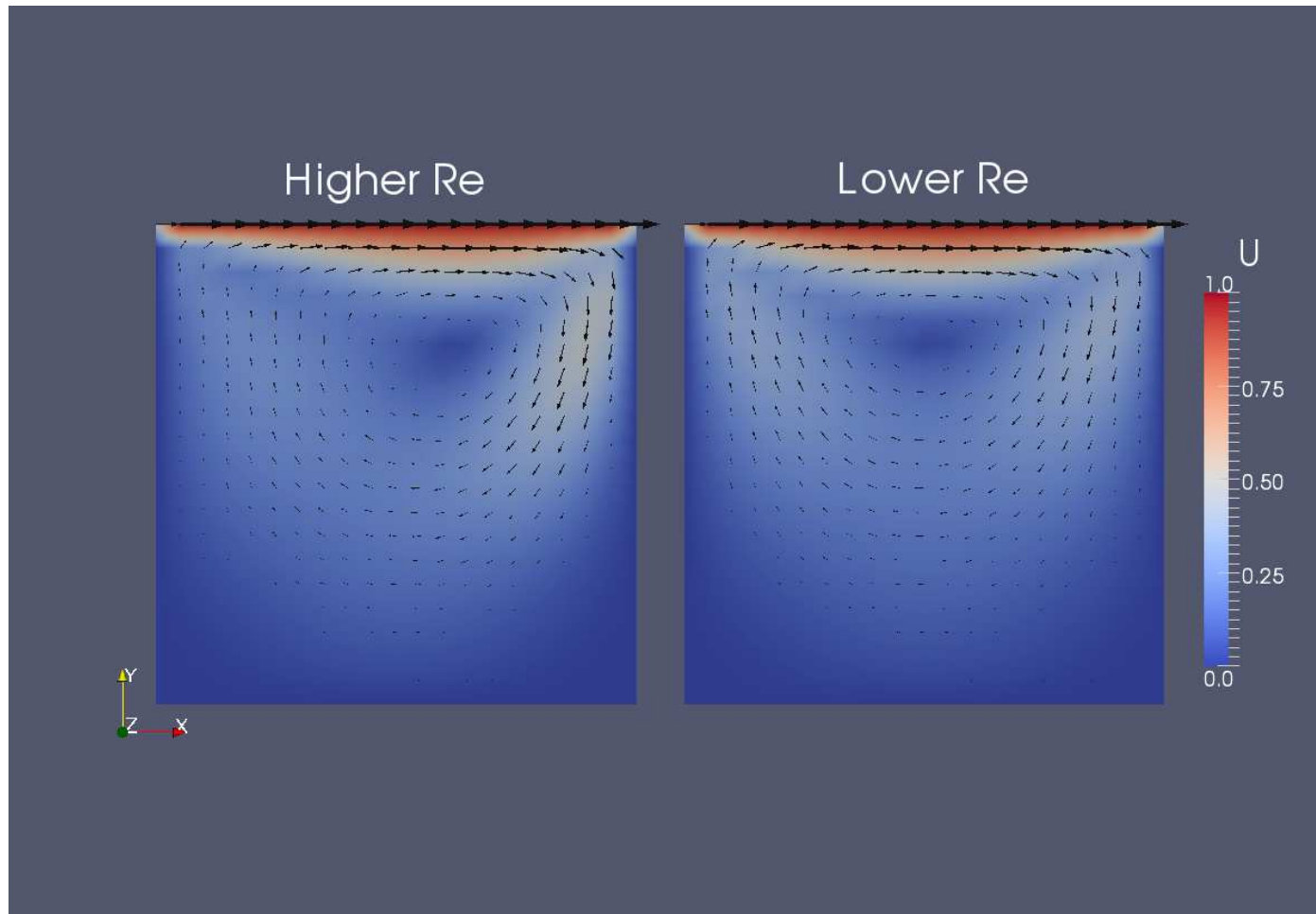
4 different .OpenFOAM files. Top: surface with edges to show the mesh.  
No slices, parallel projections in the view options.

## IcoFoam: cavityGrade



Zoom to show the stretching of the mesh. Surface with edges.

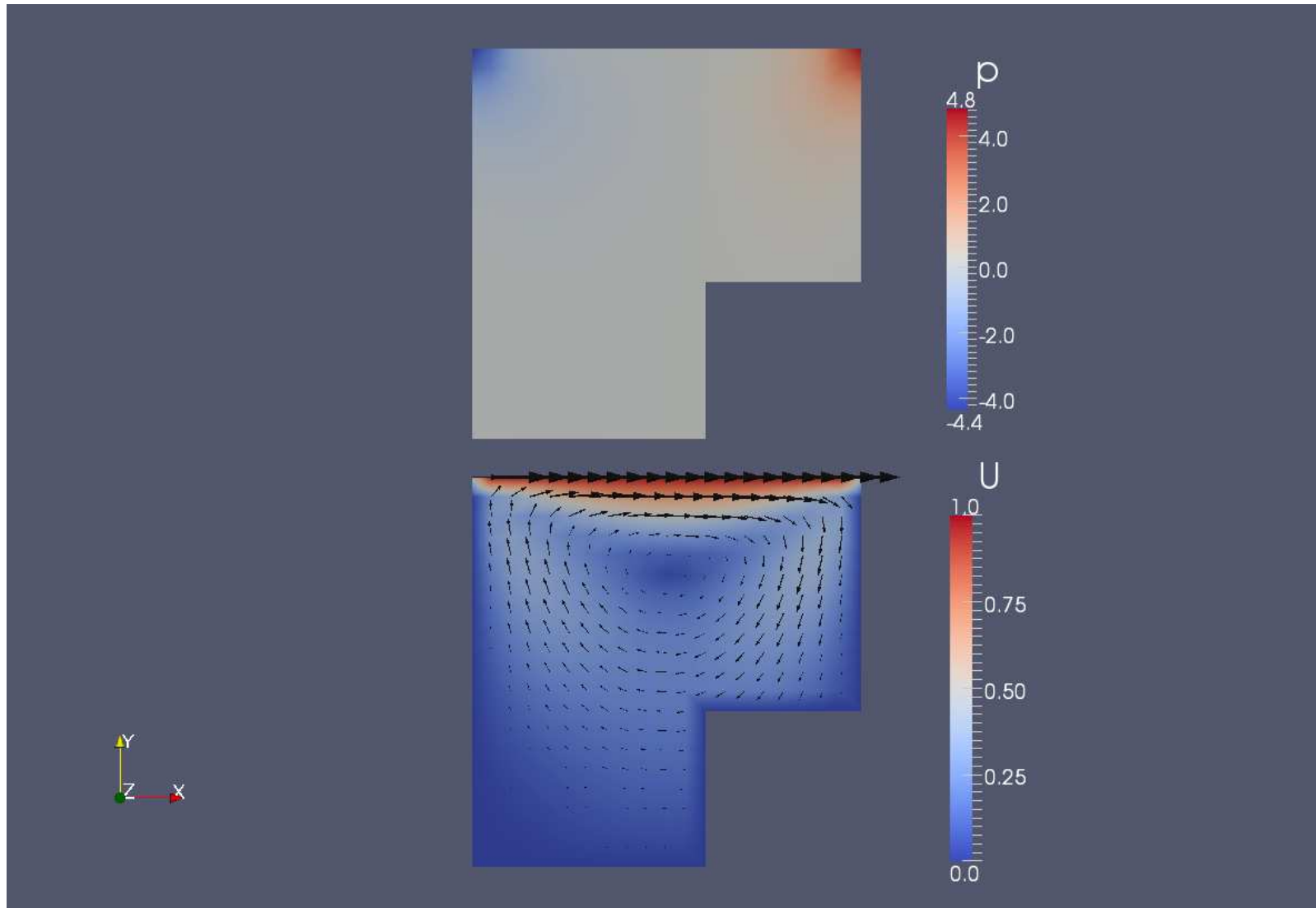
## IcoFoam: cavityHiRe



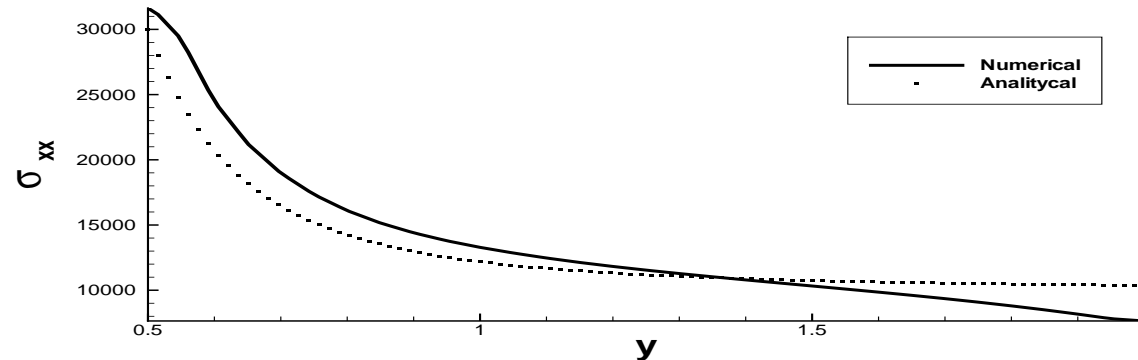
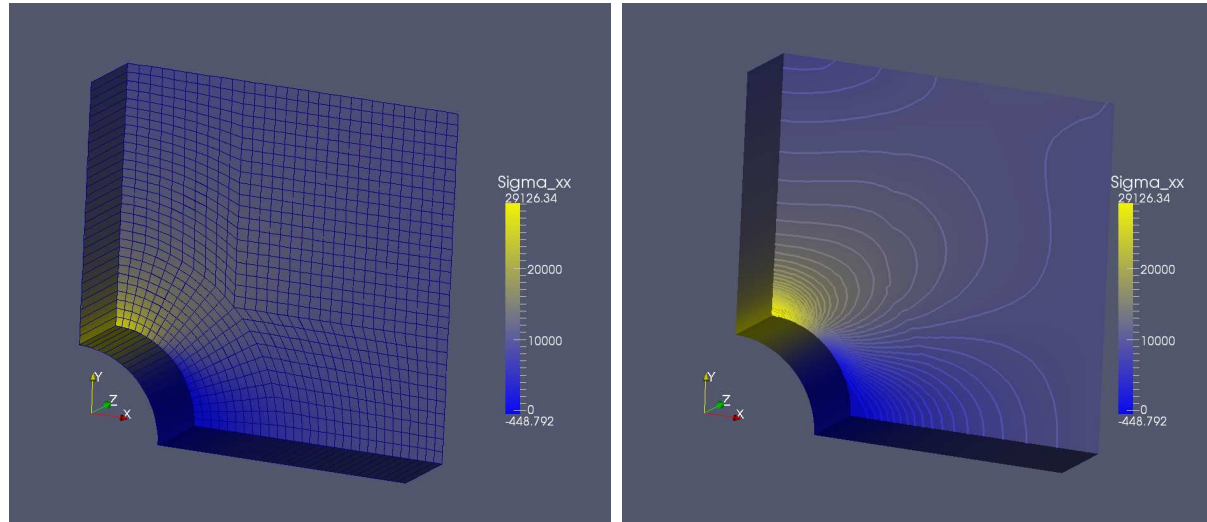
Usual filters: "Transform" (translate) and then "slice" and "Glyph".

To insert text: "Sources/Text"

## IcoFoam: cavityClipped

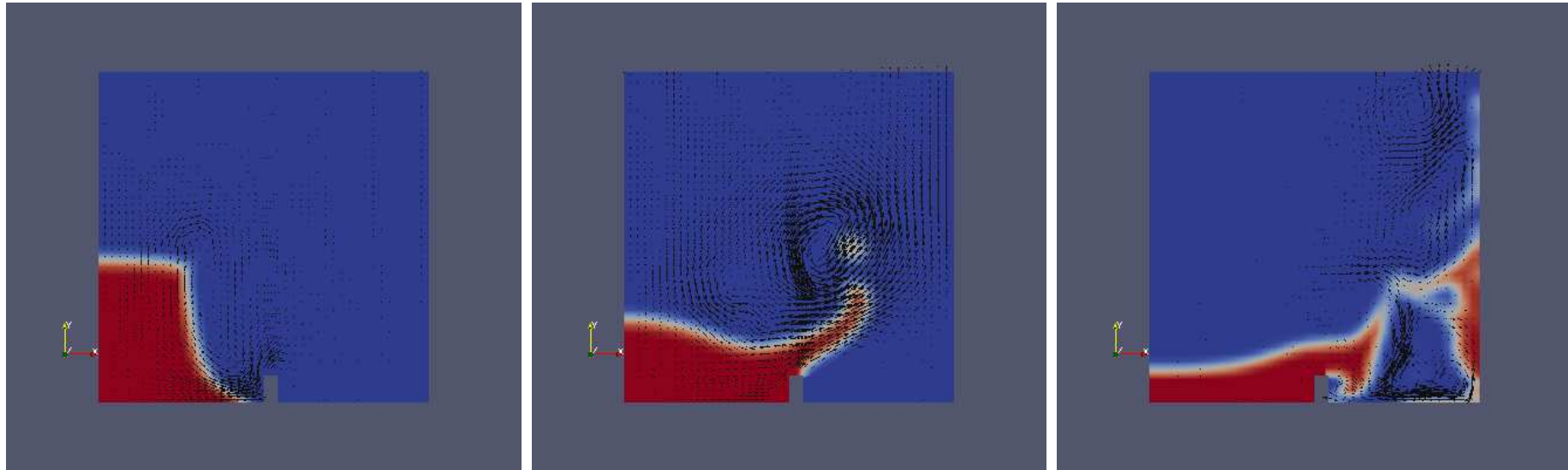


solidDisplacementFoam: plateHole



Top: "Blue to yellow" colormap. Bottom: profiles obtained with "sample" utility and figure elaborated with "Tecplot"

## interFoam: damBreak



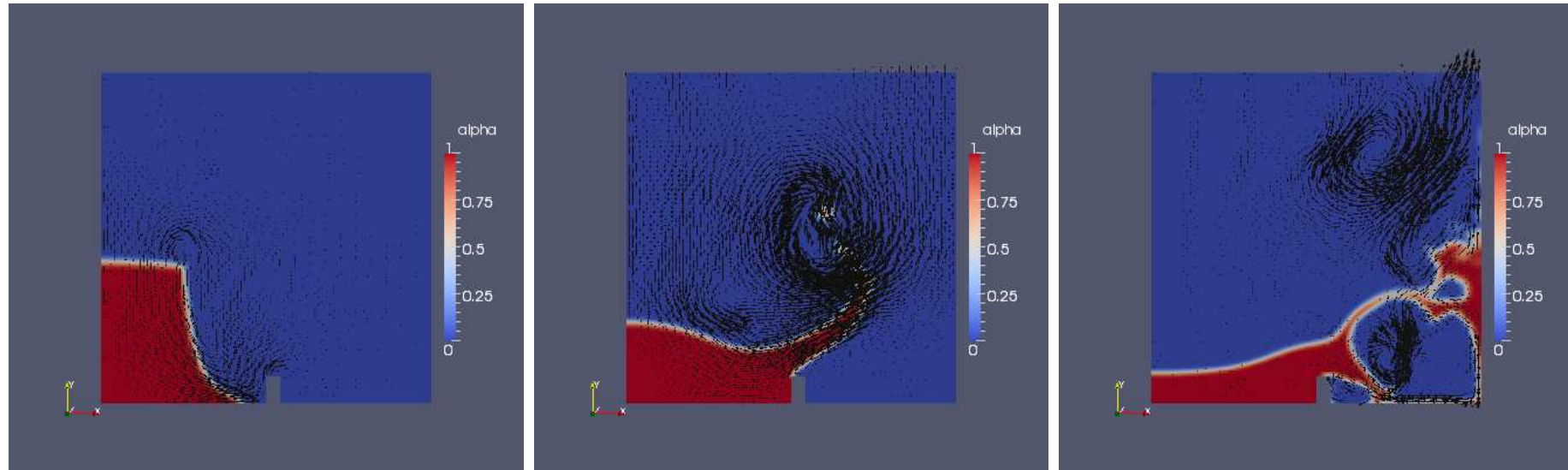
t=0.1s

t=0.25s

t=1.05s

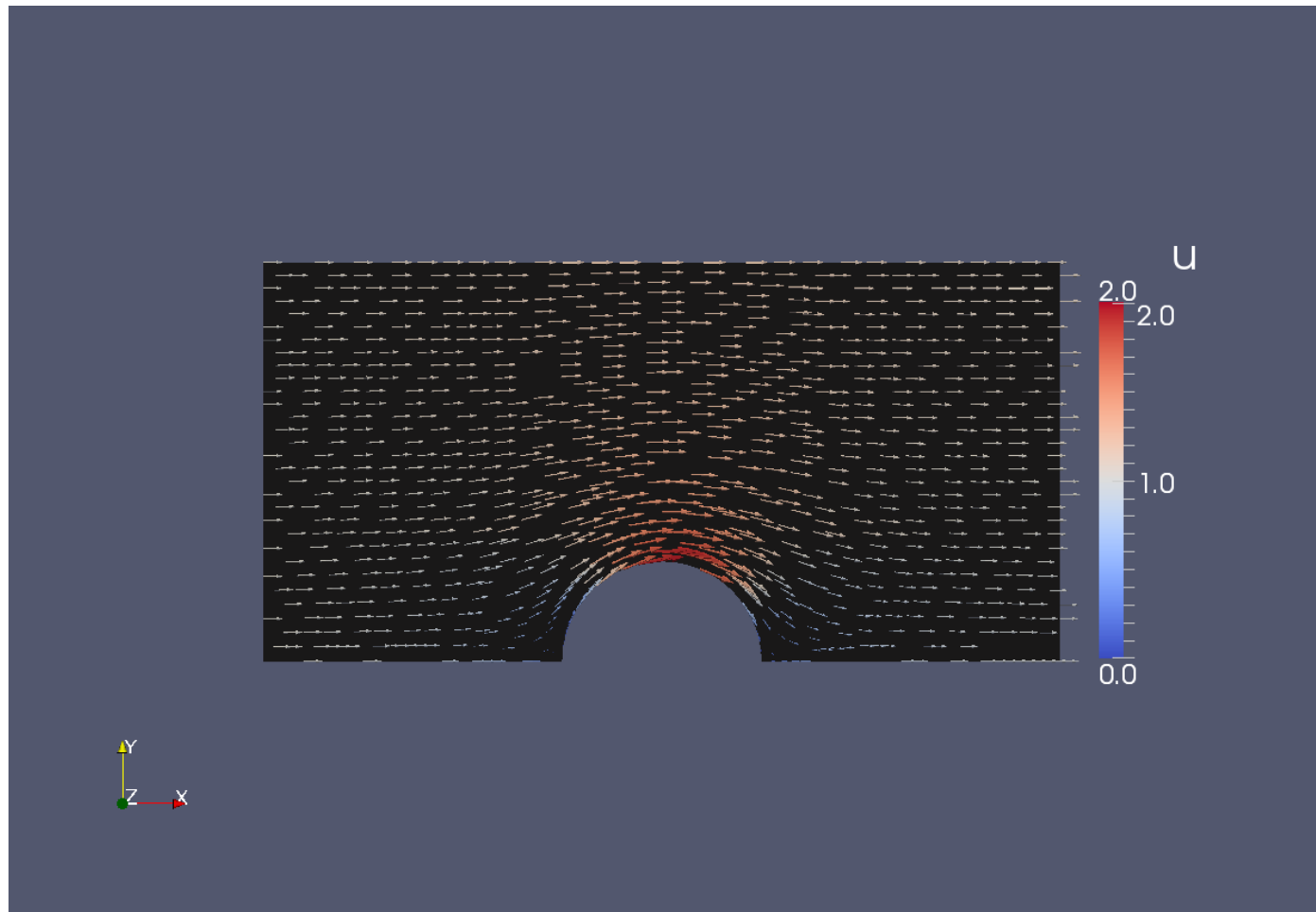
Contour of phase fraction  $\alpha_1$  and Arrow glyph for velocity

## interFoam: damBreakFine

 $t=0.1s$  $t=0.25s$  $t=1.05s$ Contour of phase fraction  $\alpha_1$  and Arrow glyph for velocity

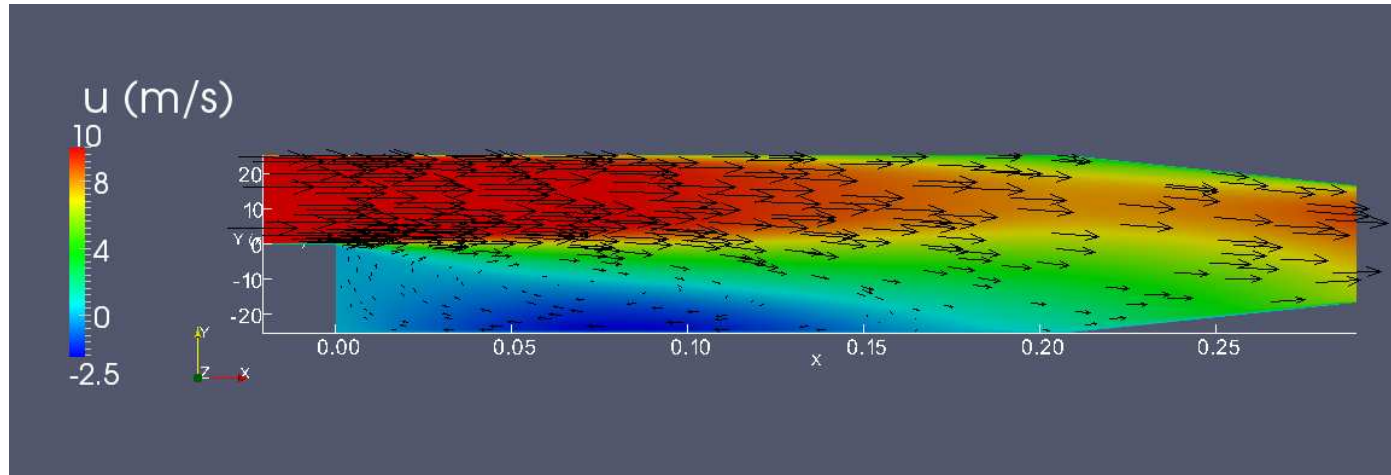


## potentialFoam: cylinder



Vectors coloured by U-X component magnitude.

## simpleFoam: pitzDaily



In Glyph options "2D Glyph" was chosen instead of "Arrow".

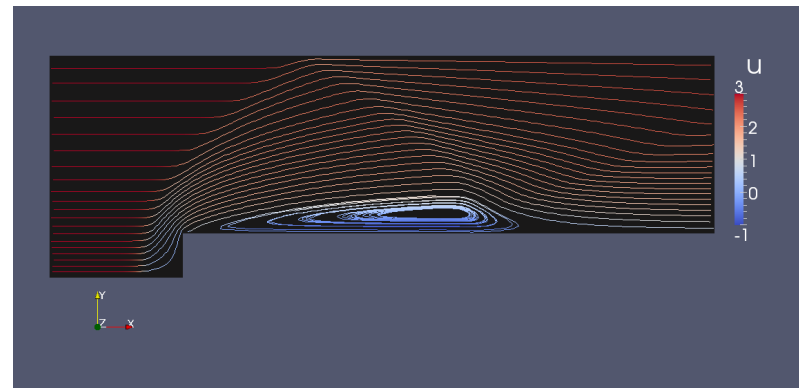
Decreased value for "Maximum points" in the Glyph suboptions to reduce number of vectors.

Question: is it possible to "skip" vectors in paraView ???

## sonicFoam: forwardStep

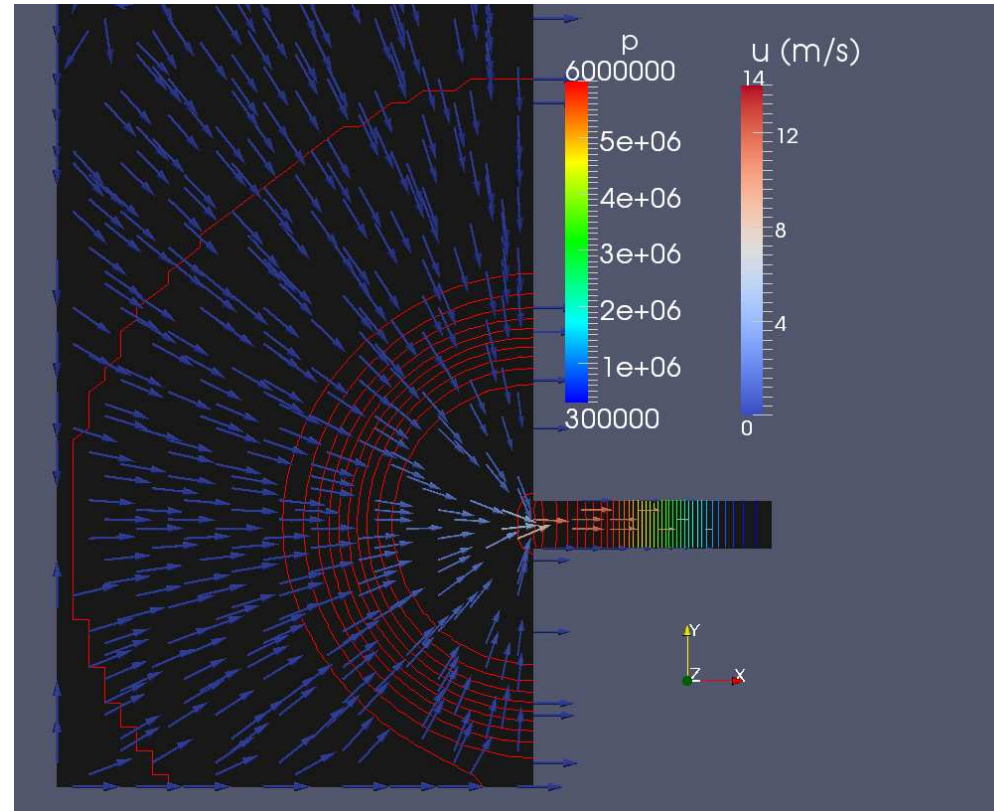


Pressure contour to visualize shocks.



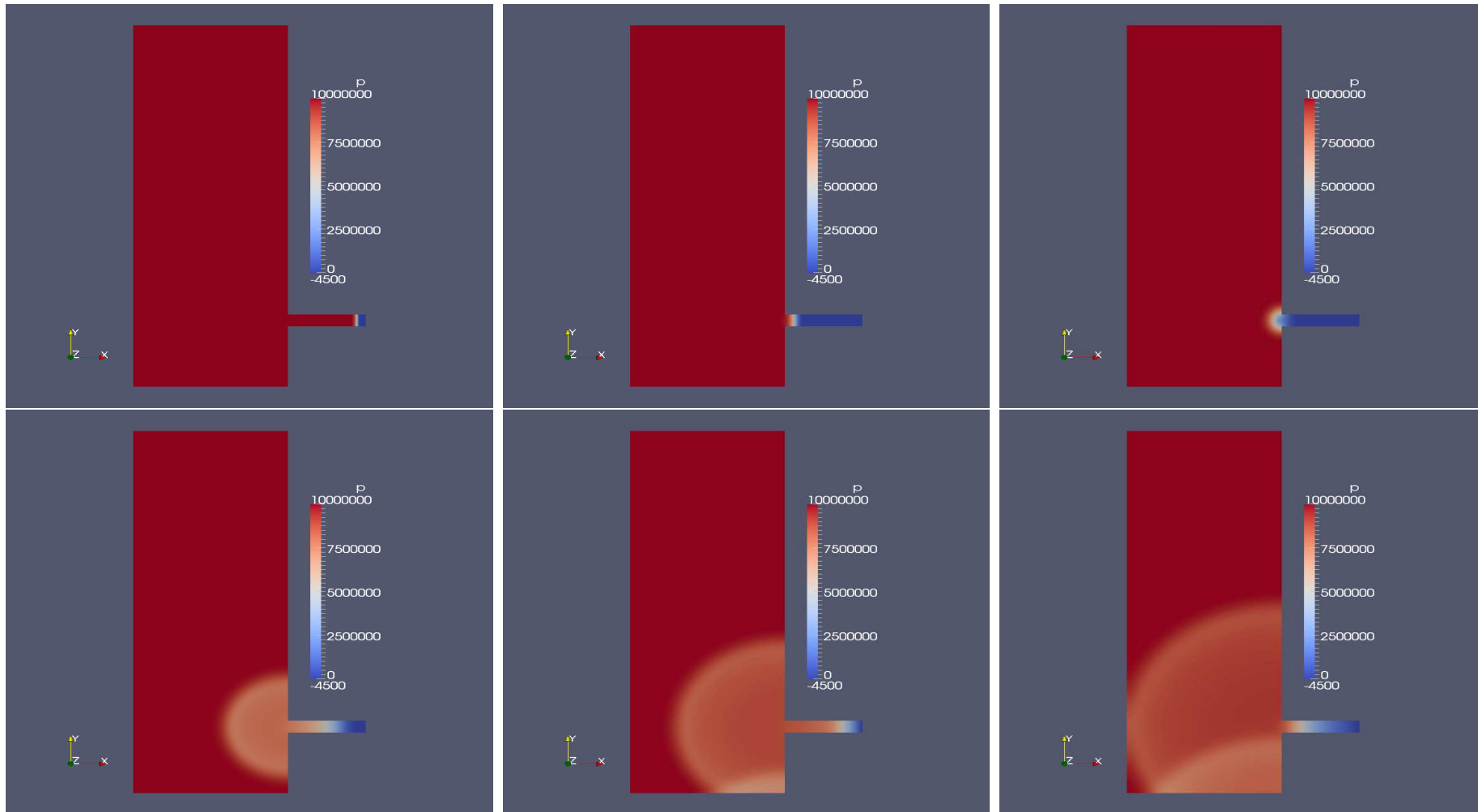
Streamlines with line source in Y direction.  
Coloured according to U - X component.

## sonicLiquidFoam: decompressionTank

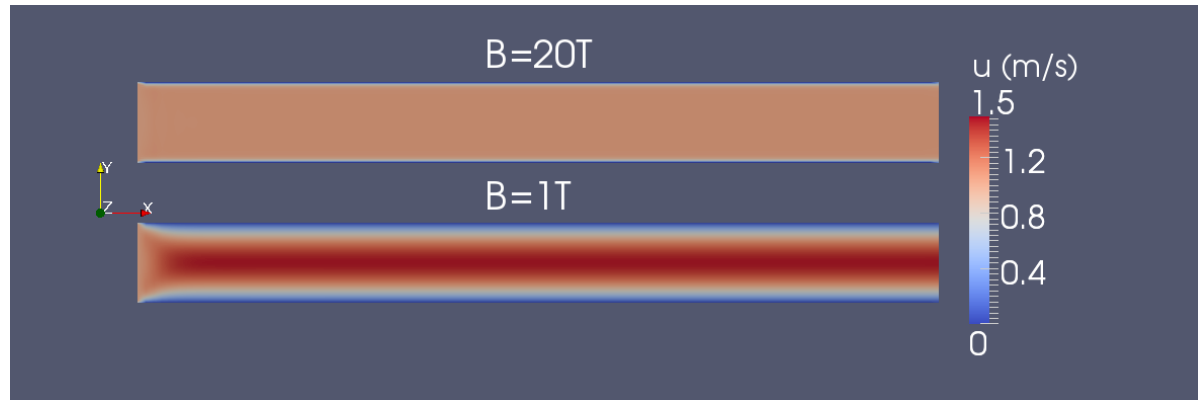


Pressure contours on a "Slice", coloured according to pressure. Vectors in the glyph scaled according to "Scalar" and coloured according to U -X component magnitude.

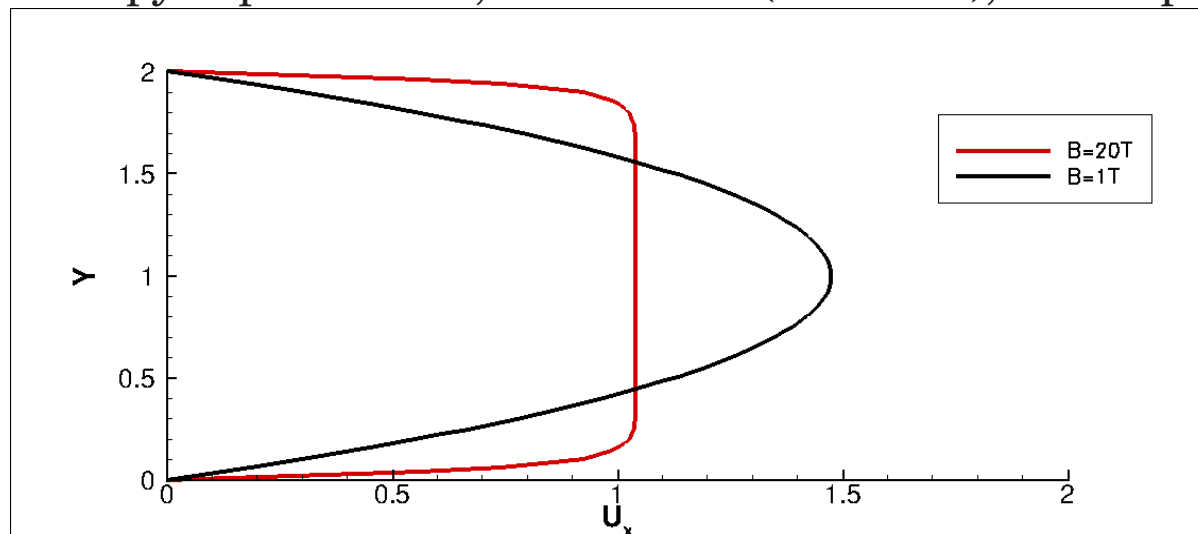
sonicLiquidFoam: decompressionTankFine



## mhdFoam: hartmann



Standard "Copy .OpeaFOAM", "Transform"(translate), "Slice" procedure.



Generated with "Tecplot"

## Modified Tutorial: forward Step

Different geometries have been considered. Different heights for the step have been analyzed:

- $h = 0.2$  test case
- $h = 0.1$  lower step
- $h = 0.3$  higher step
- $h = 0.4$  highest step

The mesh has been changed in the *blockMeshDict* files.

## Modifying blockMeshDict. Example: from 0.2 to 0.1

### Original BlockMeshDict:

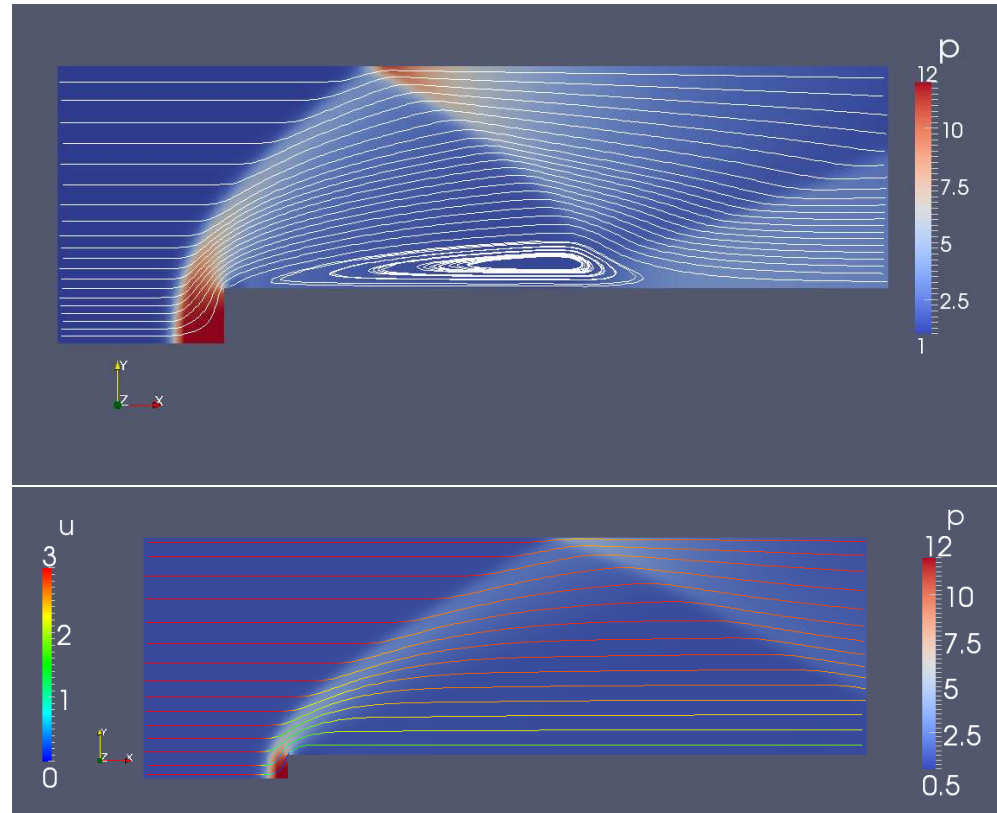
```
// * * * * * * * * * * * * * * * * * * * * //
convertToMeters 1;
vertices
(
    (0 0 -0.05)
    (0.6 0 -0.05)
    (0 0.2 -0.05)
    (0.6 0.2 -0.05)
    (3 0.2 -0.05)
    (0 1 -0.05)
    (0.6 1 -0.05)
    (3 1 -0.05)
    (0 0 0.05)
    (0.6 0 0.05)
    (0 0.2 0.05)
    (0.6 0.2 0.05)
    (3 0.2 0.05)
    (0 1 0.05)
    (0.6 1 0.05)
    (3 1 0.05)
);
blocks
(
    hex (0 1 3 2 8 9 11 10) (25 10 1) simpleGrading (1 1 1)
    hex (2 3 6 5 10 11 14 13) (25 40 1) simpleGrading (1 1 1)
    hex (3 4 7 6 11 12 15 14) (100 40 1) simpleGrading (1 1 1)
);
```

### Modified BlockMeshDict:

```
// * * * * * * * * * * * * * * * * * * * * //
convertToMeters 1;
vertices
(
    (0 0 -0.05)
    (0.6 0 -0.05)
    (0 0.1 -0.05)
    (0.6 0.1 -0.05)
    (3 0.1 -0.05)
    (0 1 -0.05)
    (0.6 1 -0.05)
    (3 1 -0.05)
    (0 0 0.05)
    (0.6 0 0.05)
    (0 0.1 0.05)
    (0.6 0.1 0.05)
    (3 0.1 0.05)
    (0 1 0.05)
    (0.6 1 0.05)
    (3 1 0.05)
);
blocks
(
    hex (0 1 3 2 8 9 11 10) (25 7 1) simpleGrading (1 1 1)
    hex (2 3 6 5 10 11 14 13) (25 50 1) simpleGrading (1 1 1)
    hex (3 4 7 6 11 12 15 14) (100 50 1) simpleGrading (1 1 1)
);
```

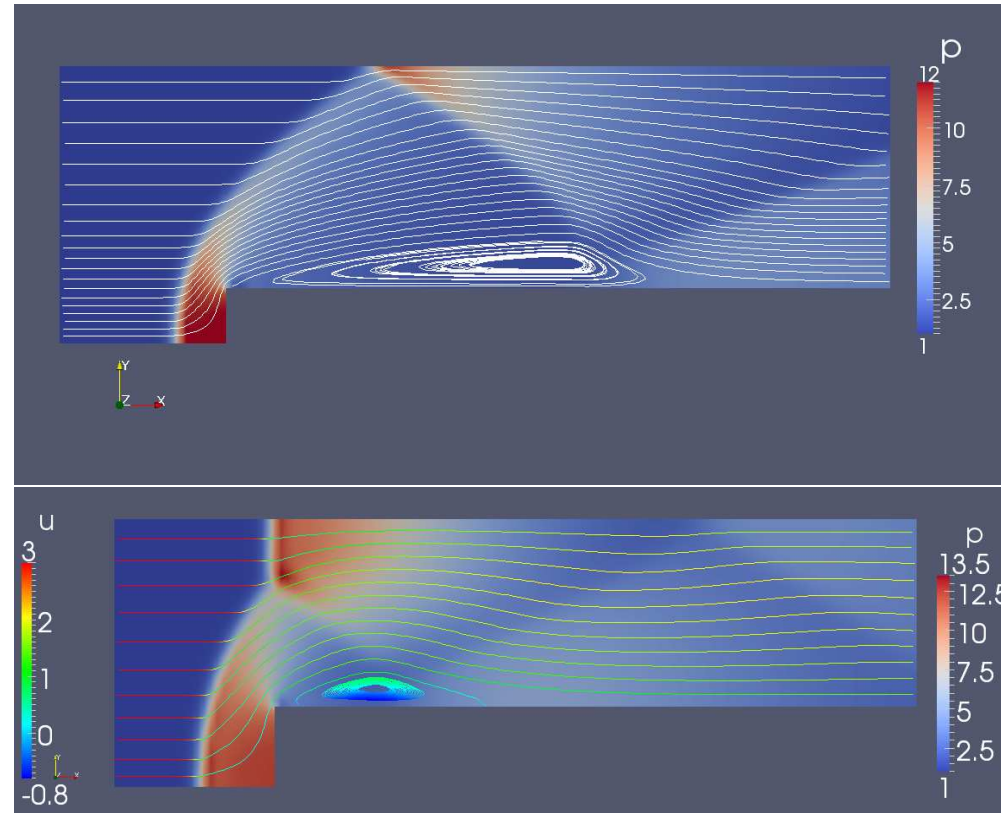


forwardStep: 10% height



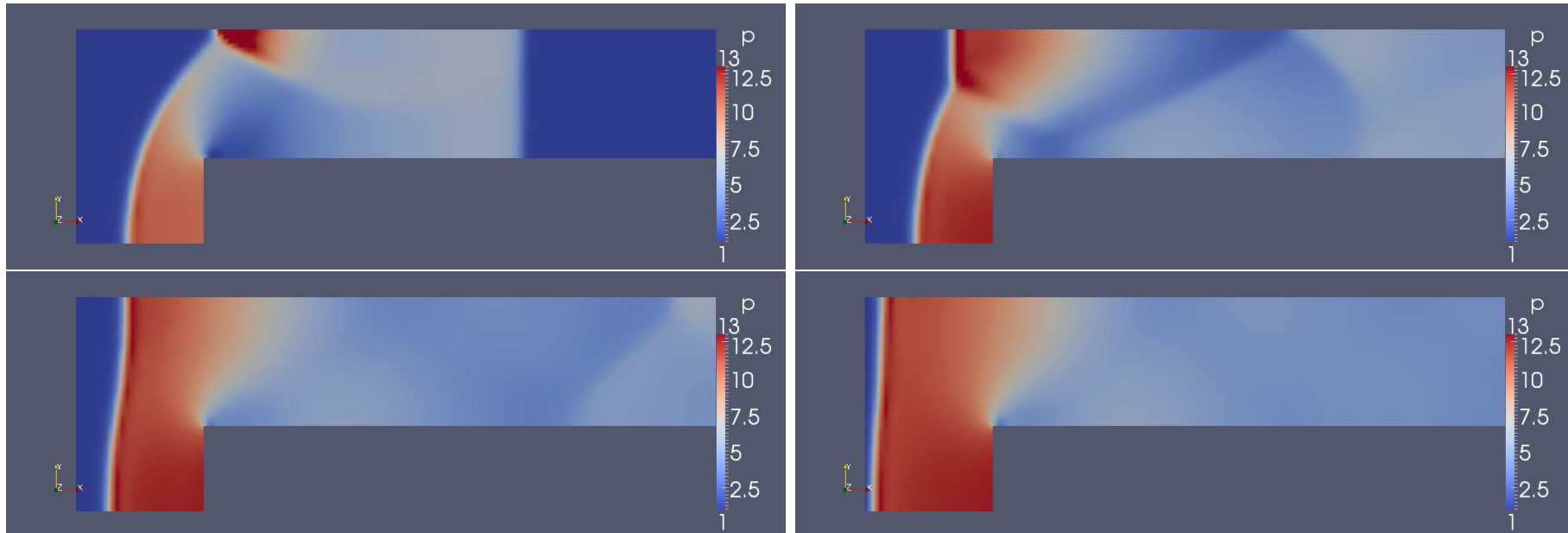
Decreasing the height of the step the recirculation zone is not formed.

forwardStep: 30% height



Increasing the step the recirculation zone moves upstream closer to the step.

forwardStep: 40% height



Increasing further the step no steady state is reached and the shock wave is reflected back.