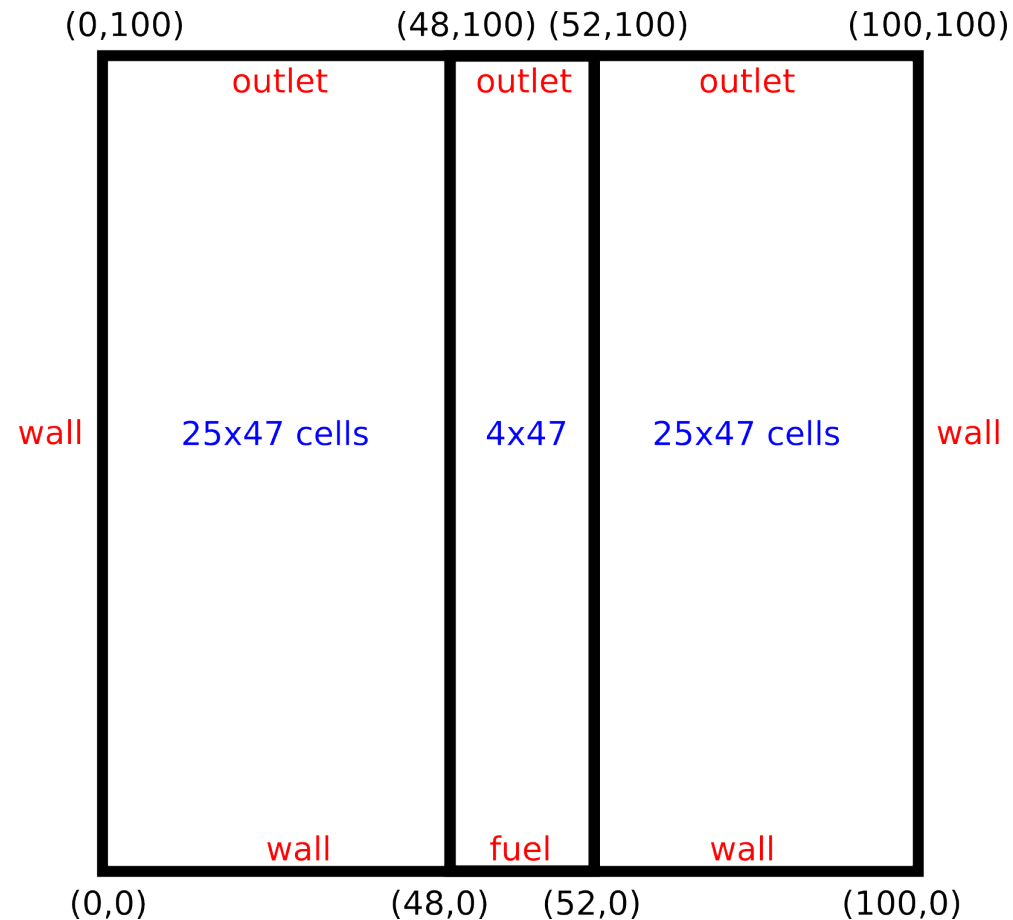
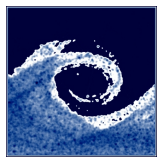


Assignments and laboratory tasks

1. Perform interFoam tutorial: laminar damBreak.
2. Create a blockMeshDict file for a 2D flame simulation. Define blocks and boundaries following this scheme:



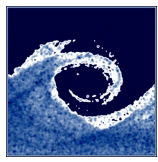


Assignments and laboratory tasks

3. Calculate vertical grading for 47 cells using 1.03 growth ratio!
4. Calculate horizontal grading for left and right blocks using 1.05 growth ratio so that the mesh is finer near fuel patch!
5. Modify your blockMeshDict to include the gradings!
6. Perform simulation using flame.tar.gz from course website and your blockMeshDict file to simulate a laminar flame!

```
cd $FOAM_RUN
mkdir flame
cd flame
wget http://www.ara.bme.hu/~hernadi/OpenFOAM/_downloads/flame.tar.gz
tar xzvf flame.tar.gz
# Copy your blockMeshDict to constant/polyMesh/
blockMesh > log.blockMesh
reactingFoam > log.reactivingFoam.1
setFields > log.setFields
sed -i 's/^\(endTime\s*\).*;$/\13;/' system/controlDict
reactingFoam > log.reactivingFoam.2
# Study files, visualize results!
```

7. Extract maximum flame temperature from solver log file to log.temp!
8. Plot convergence of maximum flame temperature!



Homework

1. Read UsersGuide chapters 2.3 and 7.1!
2. Create visualizations of damBreak and flame cases using ParaView and send images to (both) teachers by e-mail!