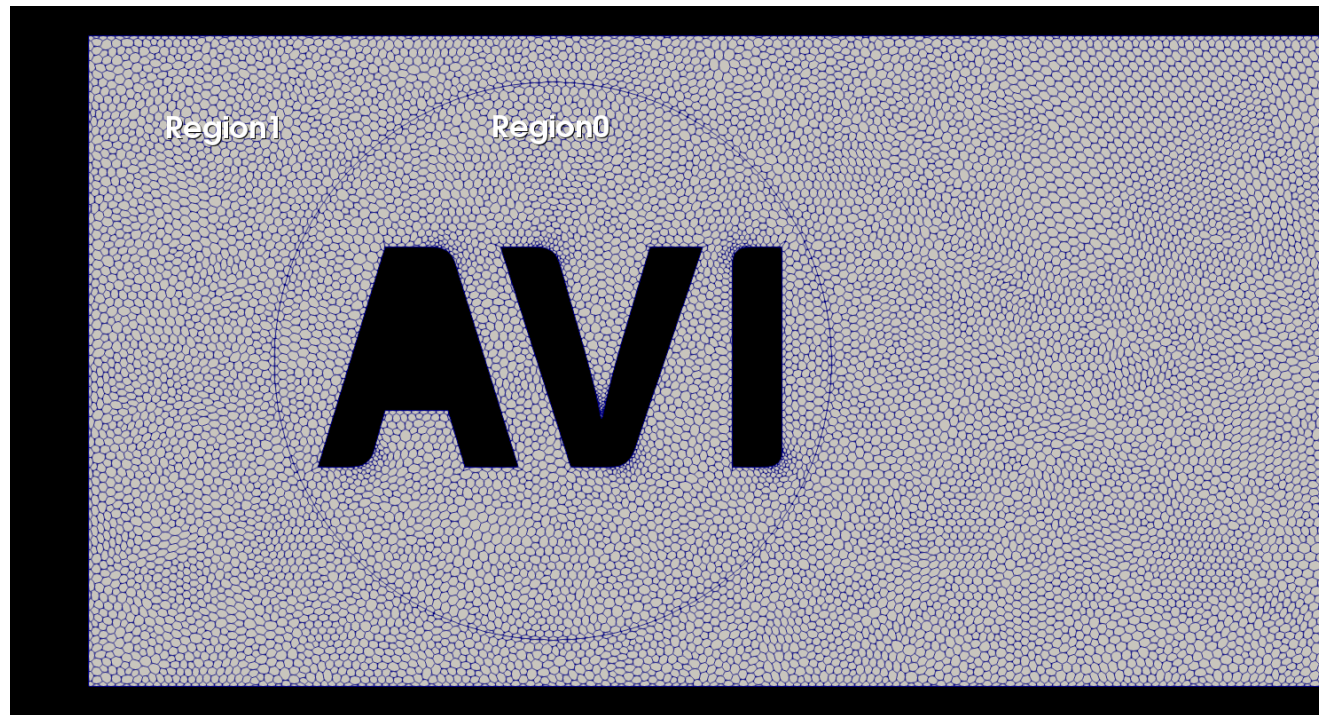


# Úloha 6

## Zadání

Proveďte nastavení úlohy tak, abyste dosáhli rotace regionu 0 rychlostí  $\Omega = 2\pi$  radiánů do protisměru hod. ručiček. Vše potřebné k této úloze je v příloze (tag: sim6A).



## Řešení

Nakopírujeme si k sobě soubor z kompletního balíčku

```
cp $FOAM_TUTORIALS/incompressible/pimpleDyMFoam/mixerVesselAMI2D/system/topoSetDict ./system/  
gedit system/topoSetDict
```

# Úloha 6

```
actions
(
  // Get both sides of ami
  // ~~~~~

  // Get all faces in cellSet
  {
    name    AVIspojeni;
    type    faceSet;
    action  new;
    source  patchToFace;
    sourceInfo
    {
      name "InnerBody.AMI1";
      name "InnerBody.AMI2";
    }
  }
  {
    name    chciCell;
    type    cellSet;
    action  new;
    source  faceToCell;
    sourceInfo
    {
      set AVIspojeni;
      option any;
    }
  }
}

{
  name    chciCellZone;
  type    cellZoneSet;
  action  new;
  source  setToCellZone;
  sourceInfo
  {
    set chciCell;
    option any;
  }
}

{
  name    chciCellZoneZRegionu0;
  type    cellZoneSet;
  action  new;
  source  setToCellZone;
  sourceInfo
  {
    set region0;
    option any;
  }
}
);
```

# Úloha 6

Více o keywords používaných v topoSetDict si můžete přečíst zde

```
find $FOAM_TUTORIALS | xargs grep 'cylinderTo*' -sl  
gedit $FOAM_TUTORIALS/mesh/foamyHexMesh/flange/system/topoSetDict-background
```

topoSet

```
Create polyMesh for time = 0  
  
Reading topoSetDict  
  
Time = 0  
  mesh not changed.  
Created faceSet AVISpojeni  
  Applying source patchToFace  
  Adding all faces of patch "InnerBody.AMI2" ...  
  Found matching patch InnerBody.AMI2 with 1922 faces.  
  faceSet AVISpojeni now size 1922  
Created cellSet chciCell  
  Applying source faceToCell  
  Adding cells according to faceSet AVISpojeni ...  
  cellSet chciCell now size 1859  
Created cellZoneSet chciCellZone  
  Applying source setToCellZone  
  Adding all cells from cellSet chciCell ...  
  cellZoneSet chciCellZone now size 1859  
Created cellZoneSet chciCellZoneZRegionu0  
  Applying source setToCellZone  
  Adding all cells from cellSet region0 ...  
  cellZoneSet chciCellZoneZRegionu0 now size 38265  
End
```

# Úloha 6

```
cp $FOAM_TUTORIALS/incompressible/pimpleDyMFoam/mixerVesselAMI2D/constant/dynamicMeshDict ./constant/  
gedit ./constant/dynamicMeshDict
```

```
dynamicFvMesh    dynamicMotionSolverFvMesh;
```

```
motionSolver     solidBody;
```

```
cellZone         chciCellZoneZRegionu0;
```

```
solidBodyMotionFunction  rotatingMotion;
```

```
origin           (0 0 0);
```

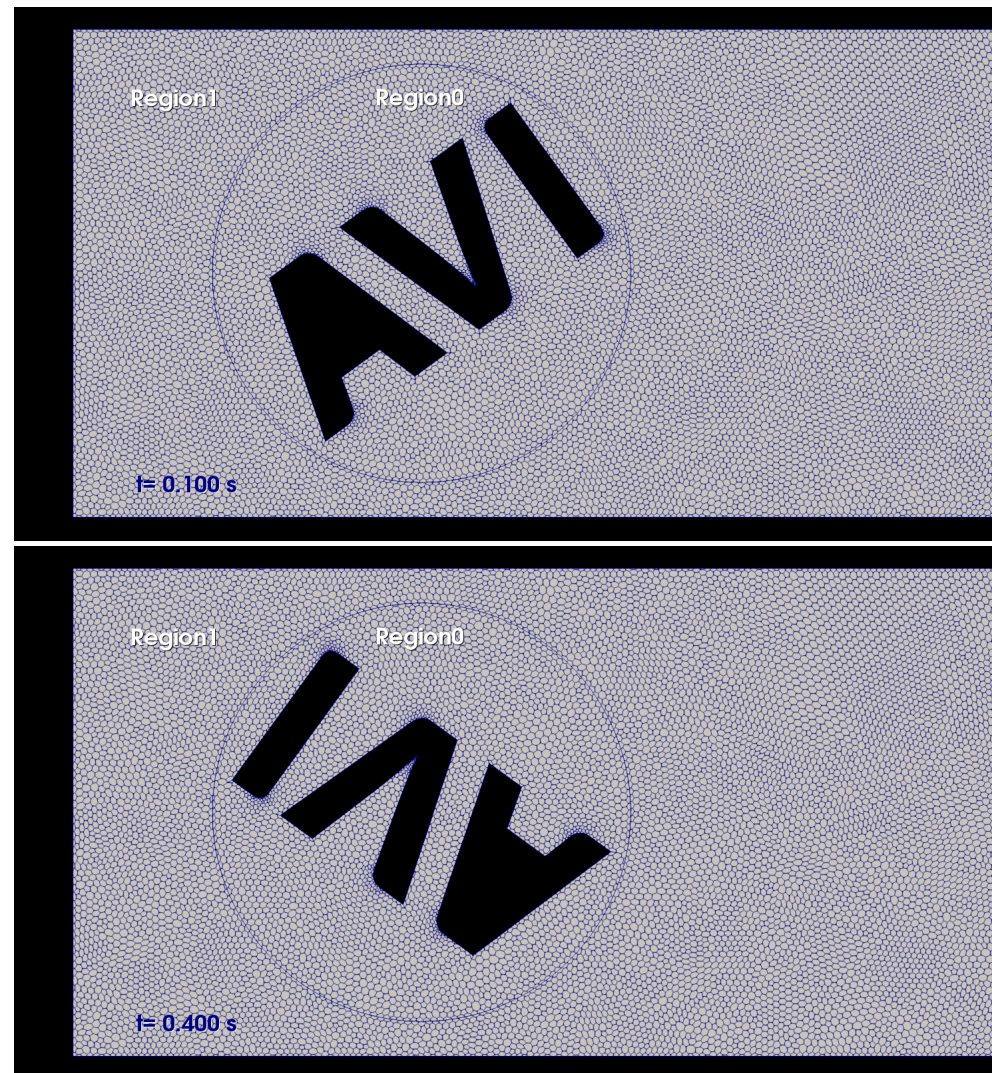
```
axis             (0 0 1);
```

```
omega            6.2832; // rad/s
```

# Úloha 6

Mezi regiony 0 a 1 byl vložen AMI=Arbitrary Mesh Interface. Provedeme příkaz moveMesh.

```
moveMesh
```

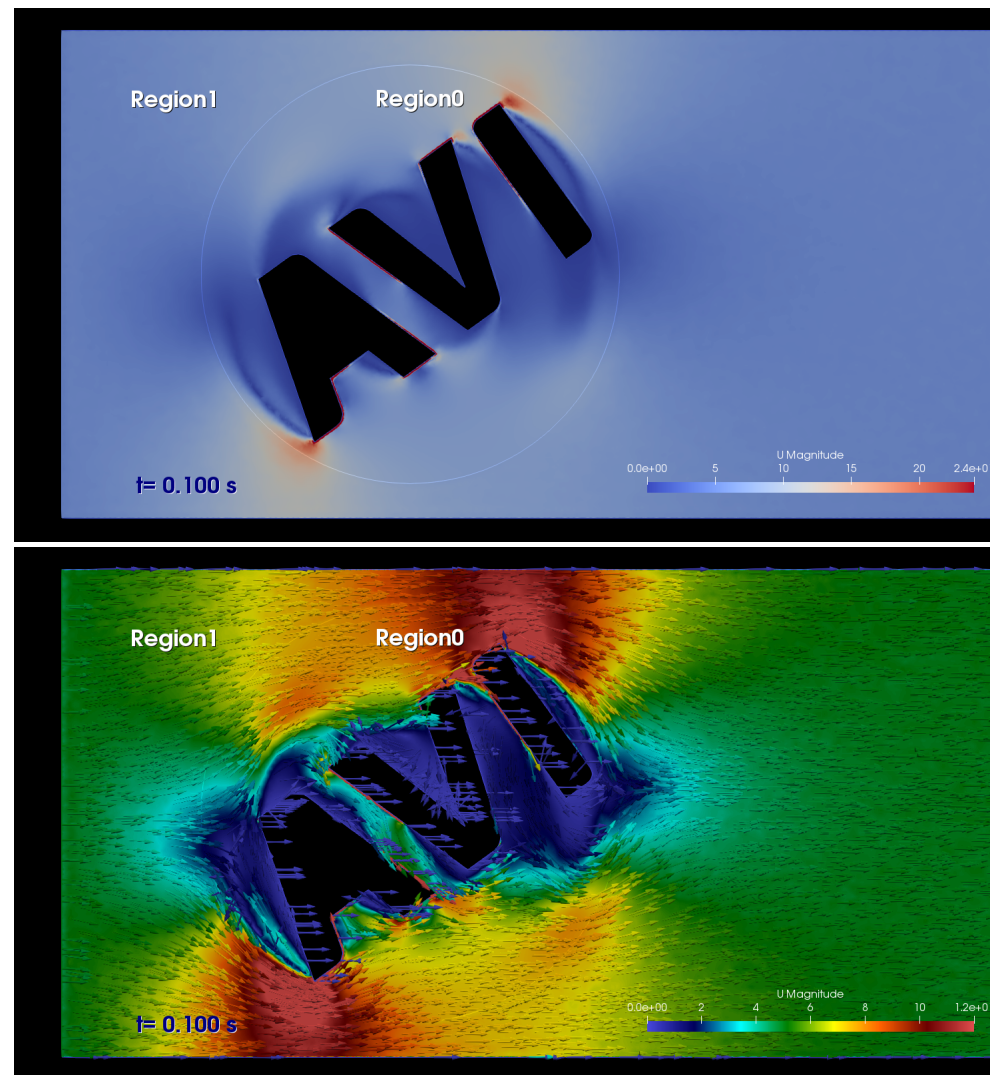




# Úloha 6

Zkontrolovali jsme, že moveMesh proběhl bez problémů. Síť nebyla zdeformována (wrong oriented faces etc.). Poslední příkaz spustí výpočet. DyM=dynamicMesh.

```
pimpleDyMFoam
```



Děkuji za pozornost

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## **Použitý OS**

- Ubuntu MATE 14.04

## **Použitý software**

- OpenFOAM 5.0

- ParaView 5.4.0

- Octave 4.2.1

- VIM 7.4.52

## **Použitá literatura**

The OpenFOAM Foundation, *OpenFOAM v5 User Guide*, Dostupné online [cit. 15-11-2017] na: <https://cfd.direct/openfoam/user-guide>

HENDERSON, Amy, et al. *The ParaView Guide*. Clifton Park, NY: Kitware, 2004. HANSEN,

Jesper Schmidt. *GNU Octave: Beginner's Guide: Become a Proficient Octave User by Learning this High-level Scientific Numerical Tool from the Ground Up*. Packt Publishing Ltd, 2011.