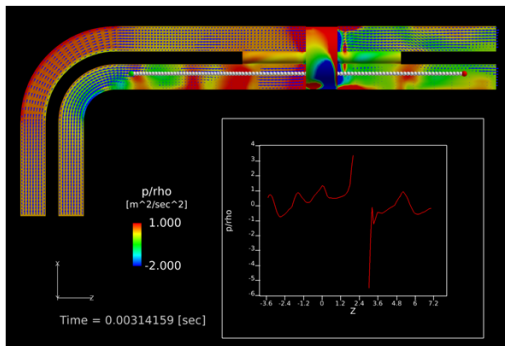# Pressure discontinuity in the parallel calculation of pimpleDyMFoam with cyclicACMI patches

- Abstruct
  - In the parallel calculation of pimpleDyMFoam with cyclicACMI patches by a workaround of the scotch decomposition, which is shown in the Bug Issue ID:1450, the pressure distribution is broken in the first time step.
  - Note that in the single calculation of pimpleDyMFoam with the same model, this symptom is not reproduced.
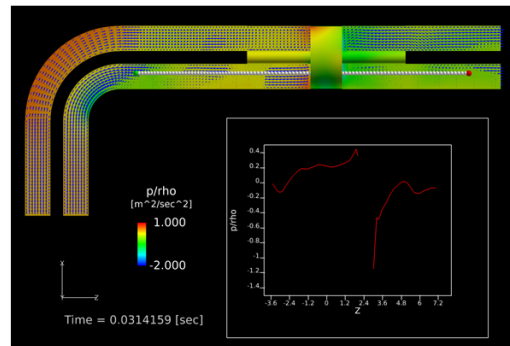
# Discription 1

- I created the OpenFOAM Case files with cyclicAMI patches, which includes the revolving body, and have been correctly executed the Case with both of the single and parallel calculations of pimpleDyMFoam, and confirmed the correct pressure distributions up to 10 time steps.
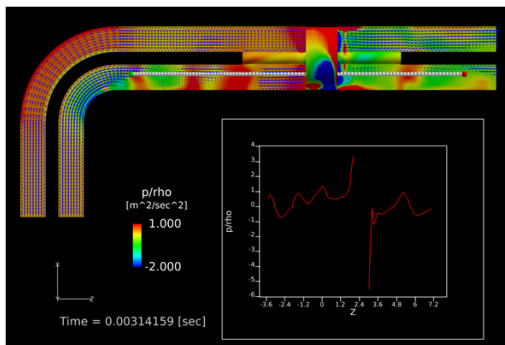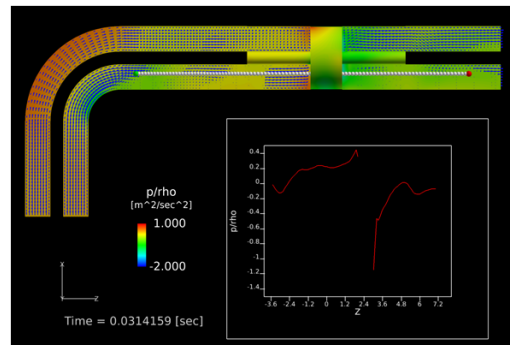
<AMI:Time = 0.00314 [sec] :1Step>

<AMI:Time = 0.0314 [sec] :10Step>

# Discription 2

- I executed the Case files, in which the cyclicAMI patches are replaced to the cyclicACMI patches, with the pimpleDyMFoam, and compared the pressure distributions of the 1st and 10th time step in both of the single and parallel calculations. The pressure discontinuities appeared only in the 1st step of the parallel calculation.

- Note that I used a workaround of the scotch decomposition, which is shown in the Bug Issue ID:1450, for the purpose of the parallel execution of the cyclicACMI case.
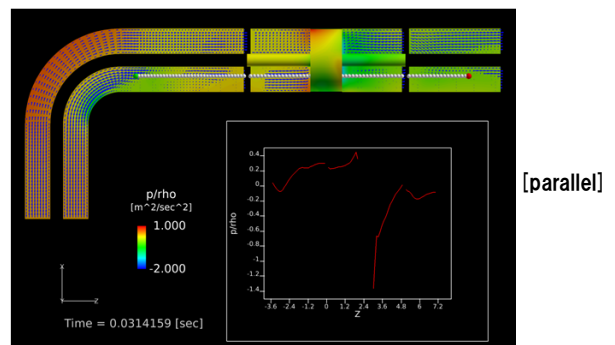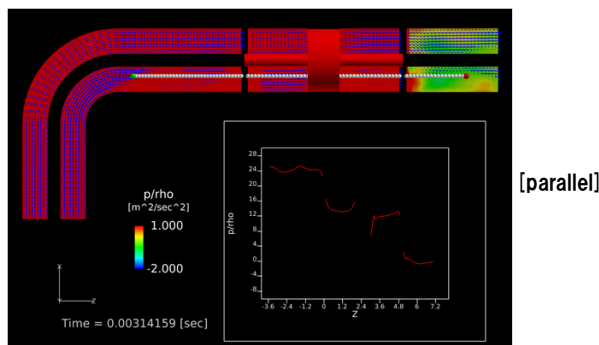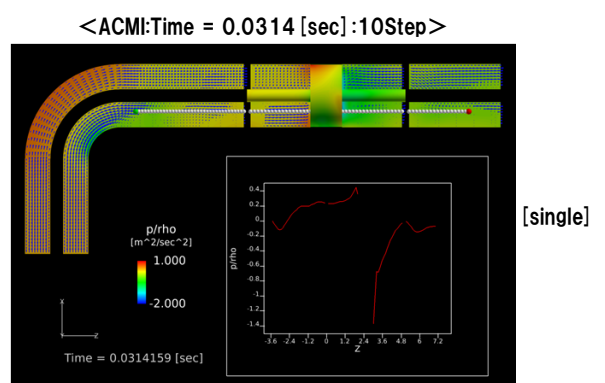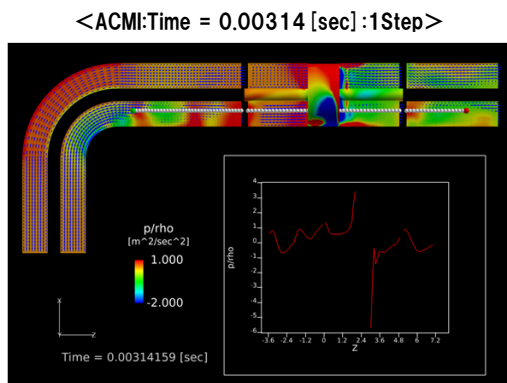
# Discription 3

- Further, I executed the continuous calculations from the 10th time step to the 20th time step, and could find the similar discontinuity in the 11th time step of the parallel calculation again.



&lt;ACMI:Time = 0.0346 [sec] :11Step&gt;

[single]

[parallel]