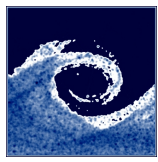


Laboratory tasks

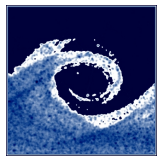
1. Perform simpleFoam tutorial pitzDaily.
2. Perform rhoCentralFoam tutorial forwardStep.

In these tasks, investigate model settings: geometry, mesh, initial and boundary conditions, transport properties, thermophysical properties, turbulence properties, solver settings, schemes, convergence behavior, solver logfiles, etc. Visualize pressure field, velocity magnitude, streamlines in order to understand fluid flow features.



Assignments

1. What is the average flow velocity on the outlet of pitzDaily case?
2. Which RAS turbulence model and coefficients are used in pitzDaily case?
3. Where can you find the source code of this turbulence model?
4. How this turbulence model calculates the turbulent viscosity?
5. What is the specific gas constant in forwardStep case?
6. What is the heat capacity at constant volume in forwardStep case?
7. Calculate the adiabatic index in forwardStep case!
8. Calculate the speed of sound at 2 K in forwardStep case!
9. What is the min. and max. Mach number at the endTime of forwardStep case?
10. How many subsonic regions are present at the endTime of forwardStep case?



Homework

Read ProgrammersGuide chapters 3.2 and 3.3!