

ANSYS Flow Through an Aortic Aneurysm - Physics Set-Up

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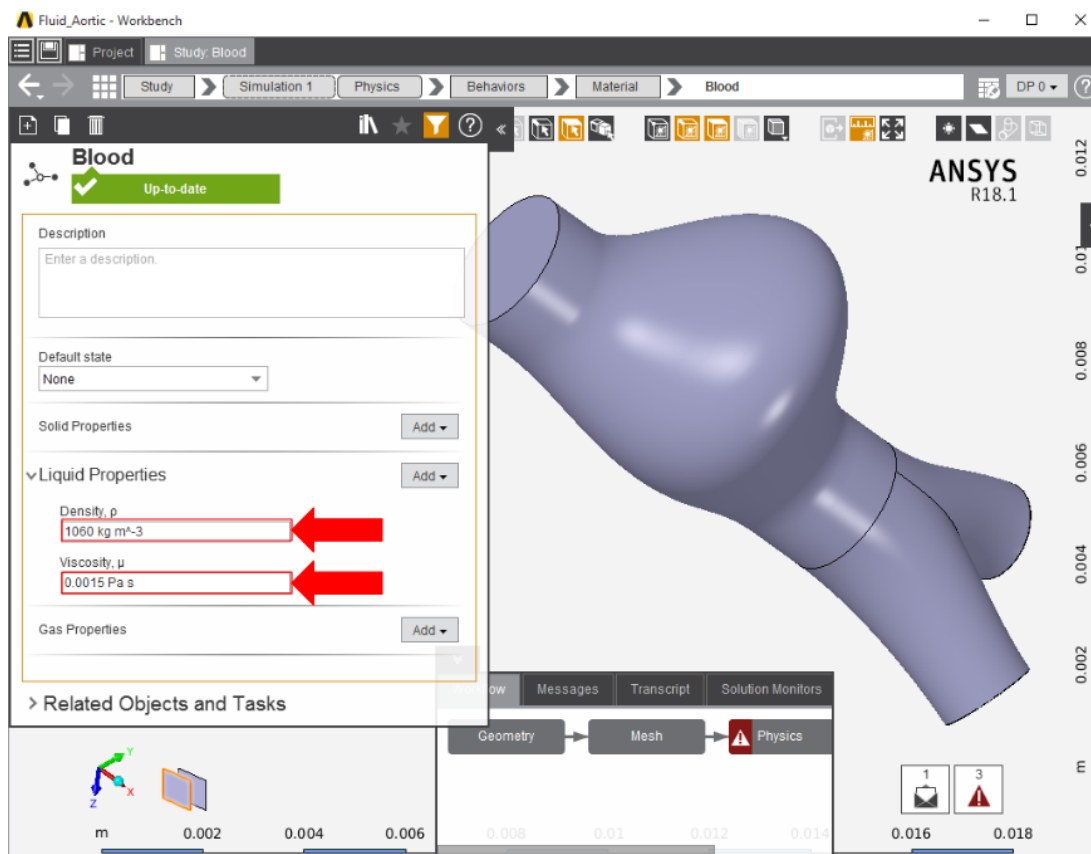
Problem Specification

1. Start-Up
2. Geometry
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Physics Set-Up

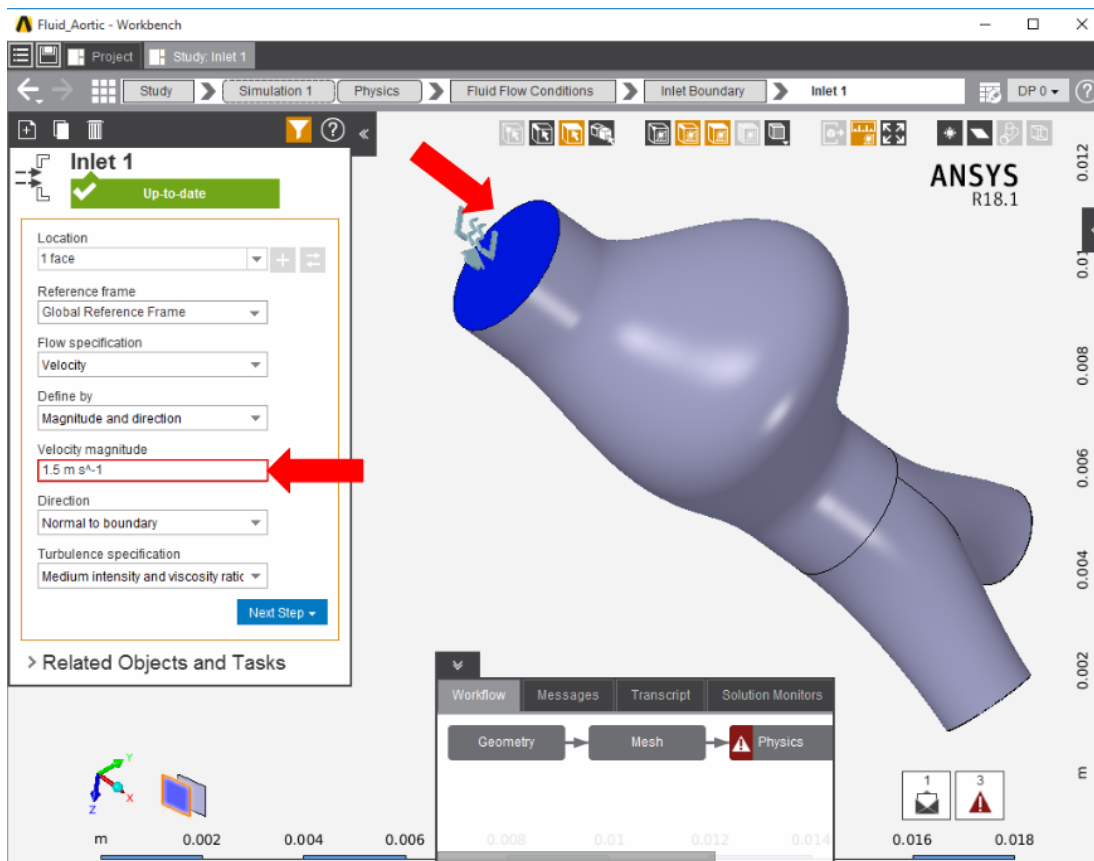
Define New Material

In the problem specification, a density and viscosity are defined for the fluid flow that do not match those of air or water. A new material must be defined with the properties that we wish to have. Select **Material Assignments**. In the **Material** drop down menu, choose **Create New**. Name the new material "blood" by replacing the bold text at the top of the panel. In the **Liquid Properties** menu, add **Density** and **Viscosity**, then assign them values 1060 [kg m⁻³] and 0.0015 [Pa s], respectively.

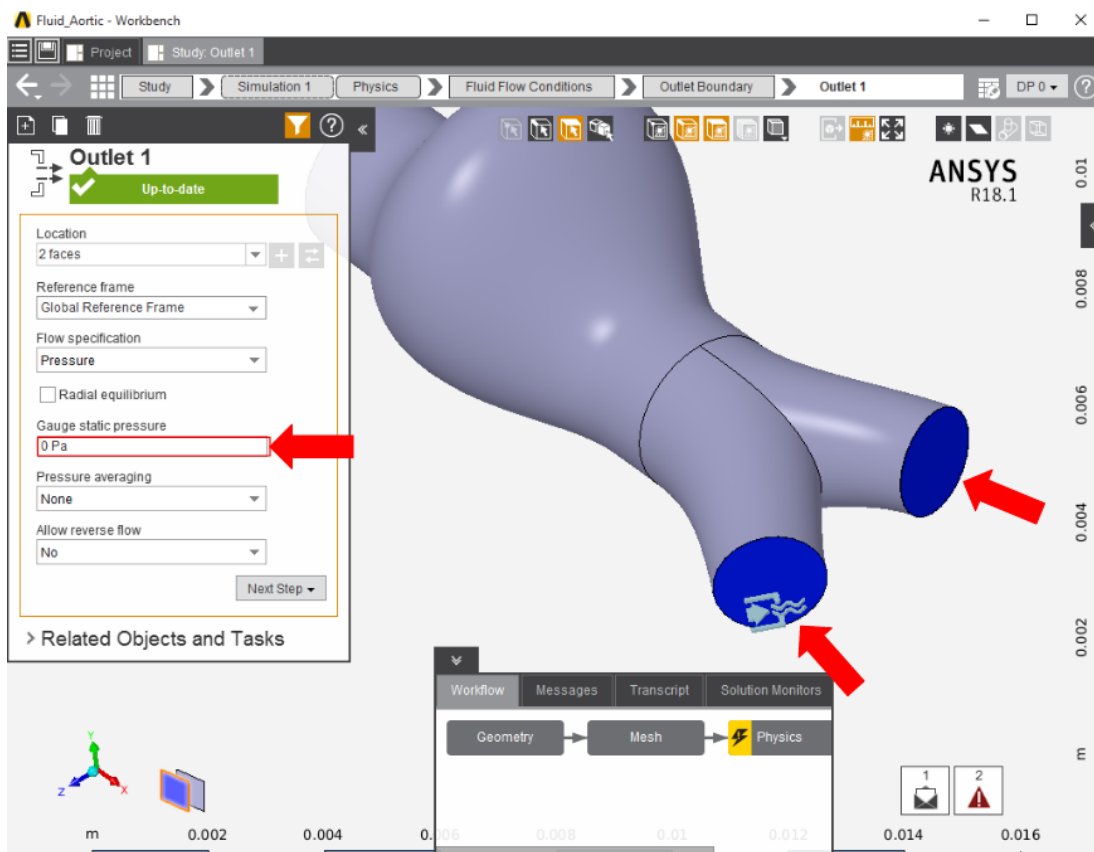


Boundary Conditions / Forces

First, the inlet must be defined using the **Fluid Flow Conditions**. In the **Add** drop down menu by **Fluid Flow Conditions**, select **Inlet**. Then, select the largest circular face as the **Location** and input the **Velocity magnitude** as 1.5 m/s.



In the same **Add** menu, define an Outlet for the remaining two circular faces with a **Gauge static pressure** of 0 Pa.



Next a **Wall** condition must be added to all surfaces that are not already defined. **Wall** can be found in the same **Add** menu as the previous conditions. AIM will automatically assign the **Location** as every face that doesn't already have a constraint on it.

Return to the **Physics** panel and press **Solve Physics**.

Go to Step 5: Solution/Results

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