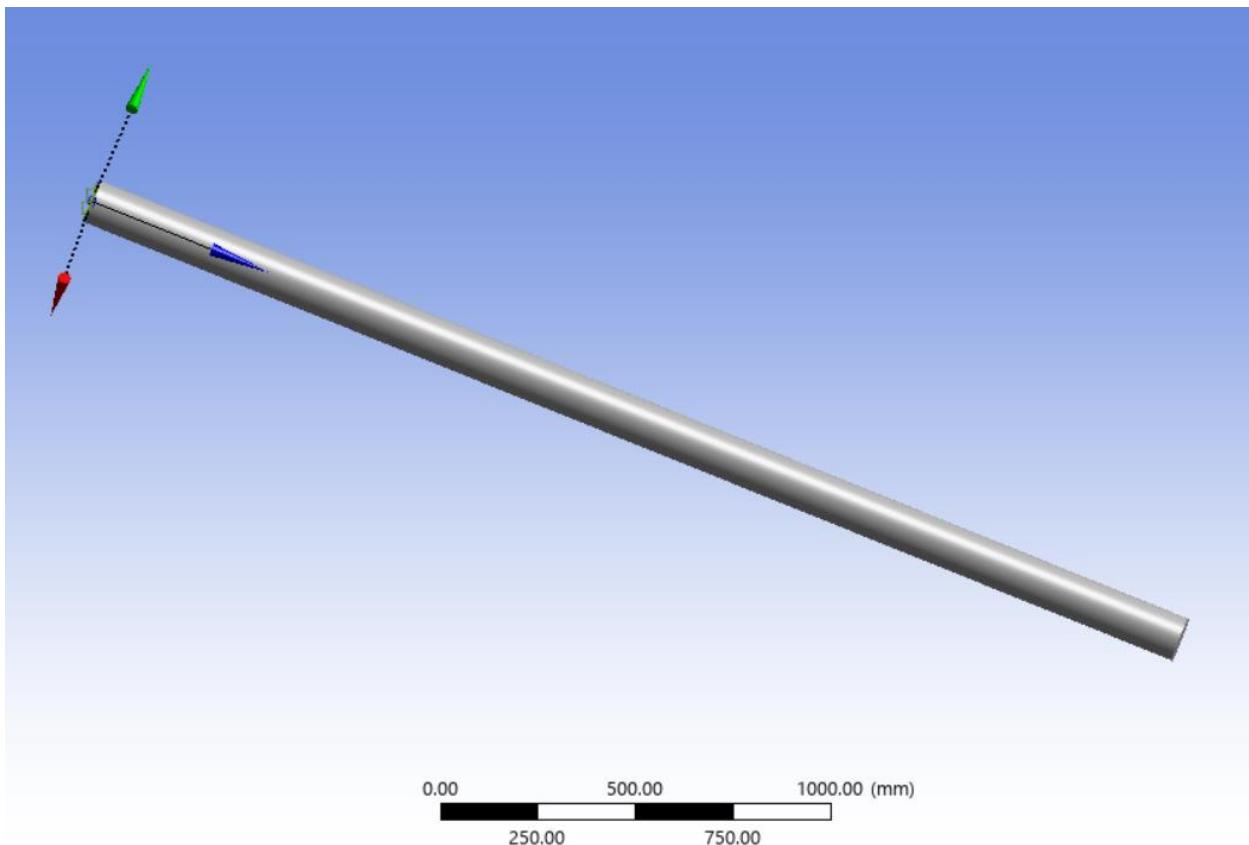


Project 17: ANSYS FLUENT: Calculation of pressure inside a water pipe

Problem Statement: Calculate the pressure inside a steel pipe with water flowing inside ($v=2.5\text{m/s}$).

Geometry:



Material Properties:

Name water-liquid	Material Type fluid	Order Materials by <input checked="" type="radio"/> Name <input type="radio"/> Chemical Formula
Chemical Formula h ₂ o< >	Fluent Fluid Materials water-liquid (h ₂ o< >)	Fluent Database... GRANTA MDS Database... User-Defined Database...
	Mixture none	

Properties

Density [kg/m ³] constant	998.2	Edit...
Viscosity [kg/(m s)] constant	0.001003	Edit...

Name steel	Material Type solid	Order Materials by <input checked="" type="radio"/> Name <input type="radio"/> Chemical Formula
Chemical Formula	Fluent Solid Materials steel	Fluent Database... GRANTA MDS Database... User-Defined Database...
	Mixture none	

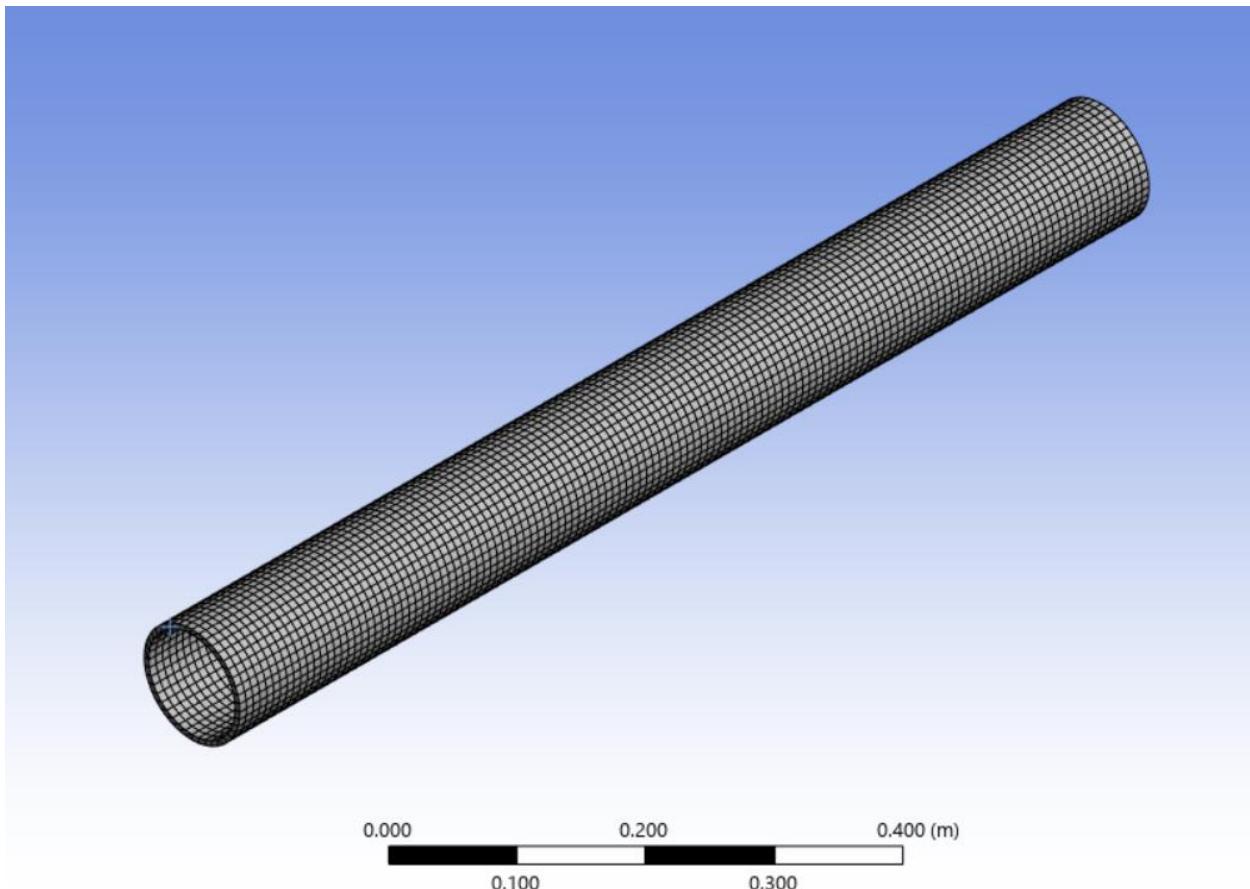
Properties

Density [kg/m ³] constant	8030	Edit...
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Boundary Conditions:

Inlet: $v=2.5\text{m/s}$. Outlet: $p=0 \text{ Pa}$.

Mesh:



Results: Pressure Contour inside the pipe.

