AIM Lid-Driven Cavity - Physics Set-Up

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Physics Set-Up

Material Assignment

The problem specifies that the fluid material is water while the default assignment is air. Once inside the **Physics** template select **Material Assignments**. Under the **Material** drop down menu select **Water (Material Samples)**.

Boundary Conditions / Forces

Since this problem statement only specified the lid of the box as moving, we assign a wall condition to the top face of the volume. Select the **Physics** task. In the **Fluid Flow Conditions** section, press **Add** > **Wall** and select the top face of the flow volume. In the **Flow Specification**, change **Wall velocity** from **Stationary** to **Moving** and specify the **Magnitude** as 1 [m s^-1], as given in the problem description. Now that the wall is moving, a direction must be specified by inputting a value in the **Cartesian Direction Components**. Input 1 as X while Y and Z must be zero. See below for an example.

A symmetry condition is applied to two opposing faces (shown below). Select **symmetry** from the **Add** dropdown menu and apply it to two opposing faces.

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. Once the Wall condition is chosen, AIM selects every face that doesn't already have a boundary condition on it.

Go to Step 5: Results

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