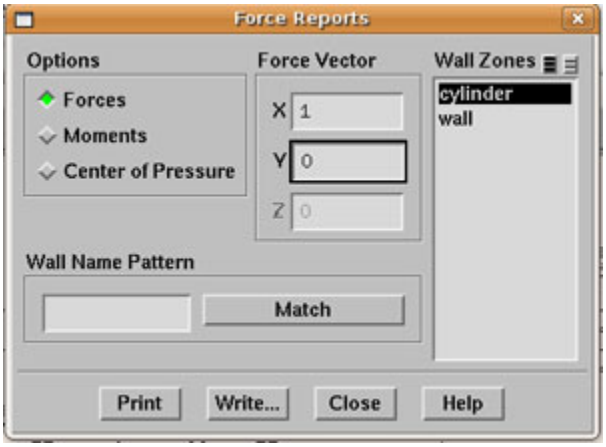
FLUENT - Flow Past a Cylinder - Step 6

Analyze Results

Drag / Lift coefficients

Report > Forces >

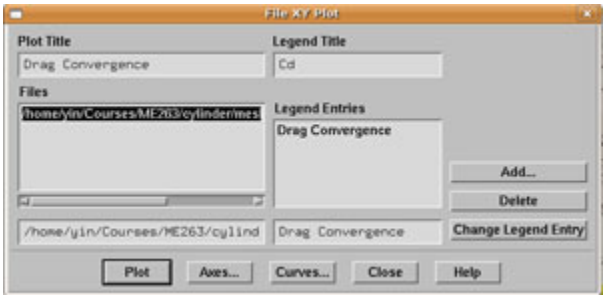
Under **Force Vector**, we set **X** = 1 and **Y** = 0 to identify the direction of drag force. Click **Print** to see what's displayed in the main window.



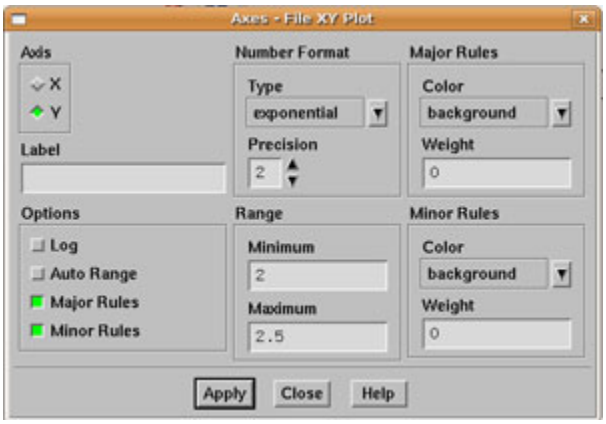
Plot convergence of the drag coefficient versus the number of iterations. Report the drag coefficient and compare it with the result in literature as shown in Table 1.

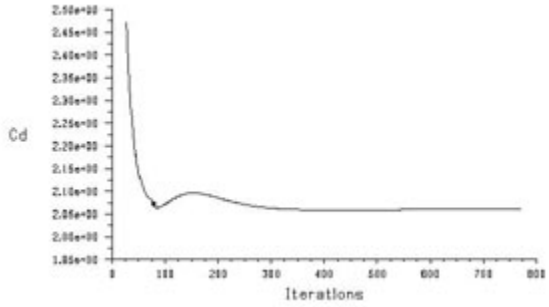
Plot>File

Click **Add...** choose the file with drag or lift coefficient.



Before you plot, you can adjust the **Axes** and **Curves** to get a better view.





Similarly, you can plot the lift coefficient, which should be zero for the symmetric flow. As you can see, the drag coefficient is around 2.1, which is significantly higher than the result in the table. Next, we will try to increase the domain size and repeat the simulation.

Re	40	300	1000
Mittal 2	1.53	1.36	1.45
Henderson 3	1.54	1.37	1.51
Marella et al 4	1.52	1.28	-
Mittal&Balachandar 5	-	1.37	-

Table 1 Mean drag coefficient in literature for the flow past a 2D cylinder.

Go to Step 7: Change the domain size.

See and rate the complete learning module.

Go to all FLUENT Learning Modules