Turbulent flow in a Lid driven cavity using OpenFOAM

Talk to a Teacher
http://spoken-tutorial.org
National Mission on Education through ICT

http://sakshat.ac.in
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Learning Objectives

- **Solving turbulent flow case in OpenFOAM**

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- **Plotting StreamLines in paraview**

System Requirement

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- **ParaView version 3.12.0**

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Prerequisite

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- **Knowledge of how to simulate flow in a Lid Driven Cavity**

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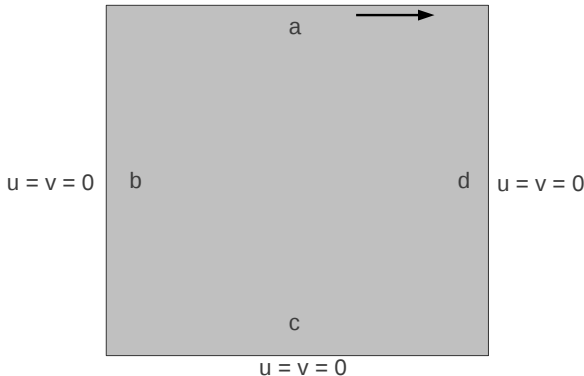- **If not, please refer to the relevant tutorials on http://spoken-tutorial.org**

Lid Driven Cavity

b,c,d – STATIONARY WALLS   a – MOVING WALL

u = 1m/s , v = 0

a

u = v = 0   b   d   u = v = 0

c

u = v = 0

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- **The lid velocity U=1m/s**

Lid Driven Cavity

- **The lid velocity U=1m/s**
- **We are solving this for a reynolds number Re=10,000**

- **We are using a Transient solver**

Solver

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- **for incompressible**

Solver

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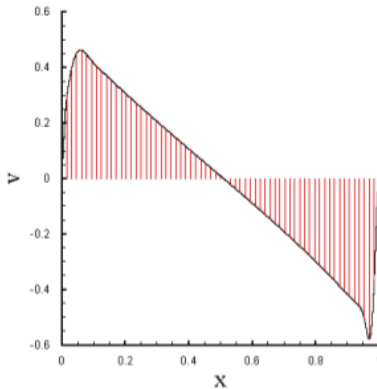- **for incompressible**
- **turbulent flow of Newtonian fluids**

Solver

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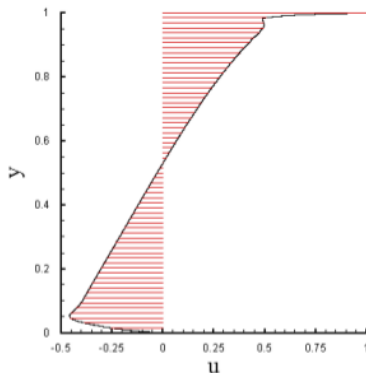- **PisoFoam**

e) Re=10,000

Lid Driven Cavity-Ghia et al

e) Re=10,000

Summary

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Assignment

- **Modify the grid size of the cavity**

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- **Change it to (100 100 1)**

Assignment

- **Modify the grid size of the cavity**
- **Change it to (100 100 1)**
- **Visualise the results in paraview using streamlines**

About the Spoken Tutorial Project

- **Watch the video available at http://spoken-tutorial.org /What_is_a_Spoken_Tutorial**

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- It summarises the Spoken Tutorial project
- If you do not have good bandwidth, you can download and watch it

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- **Conducts workshops using spoken tutorials**
- **Gives certificates to those who pass an online test**
- **For more details, please write to contact@spoken-tutorial.org**

Acknowledgements

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- **It is supported by the National Mission on Education through ICT, MHRD, Government of India**
- **More information on this Mission is available at http://spoken-tutorial.org /NMEICT-Intro**