Numerical Methods for Fluid Dynamics: TD7

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Forewords

Download TD7.tar, and then type :

```
> tar xvf TD7.tar
> cd TD7
> ipython --pylab
```

1 Confined flow

The point of this exercise is to solve for the Navier-Stokes equation in the configuration of a jet between two boundaries. In order to achieve this, we will only slightly modify the code of TD4 (lid-driven cavity), in order to account for the boundary conditions.
Edit the `NSjet.py` code and propose some boundary conditions to impose a horizontal velocity $u = 1$ on the central 1/3 of the left boundary, no-slip (or stress-free) conditions on top and bottom plates and an *outflow* condition on the right boundary.

B/ Edit the code to implement these boundary conditions.

2 Absorbing boundary conditions

A/ Analyse the `OneWay.py` code and run it. Modify the boundary conditions (Dirichlet vs Neumann), what do you observe ?

B/ Modify the code to implement one-way boundary conditions (Engquist-Majda).