

## A few examples of simulations (page in progress)

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### Jet through oscillating bodies

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$\text{Re}=1000$  - 3 oscillation frequencies ( $f=0.25$ ,  $f=0.5$  and  $f=1.0$ )  
Isosurface of vorticity magnitude coloured with longitudinal velocity

[movie\\_flow\\_through\\_oscillating\\_bodies\\_converti\\_.mp4](#)

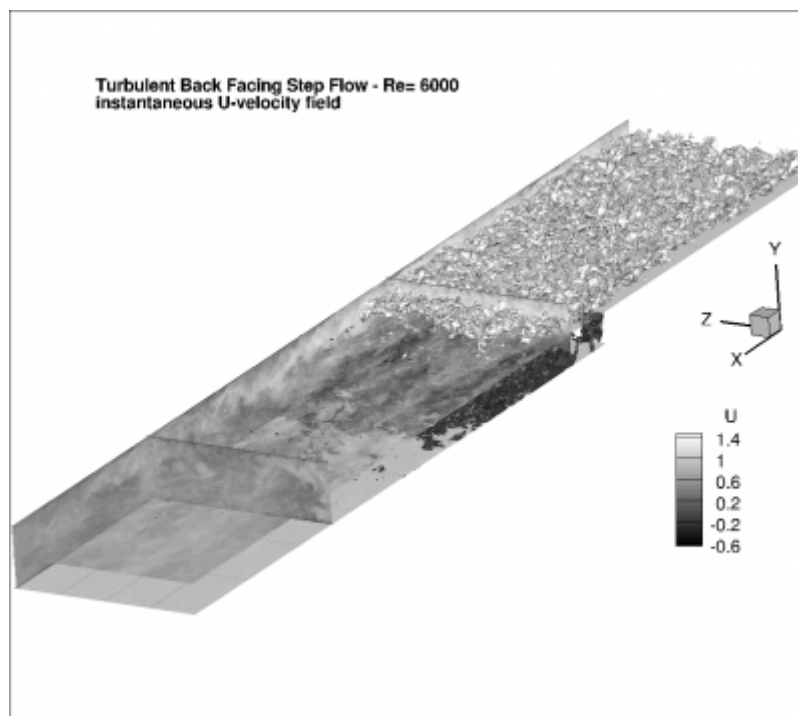
[About this dataset ...](#)

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### 3D turbulent backward-facing step flow

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$\text{Re}_H=6000$   
isosurfaces of longitudinal velocity



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### Flow around an Ahmed body

$\Re_H=10000$

## Isosurface of Q-criterion coloured with the longitudinal velocity

### Front side view

[Front side view](#)

### Downwards view

[Downwards view](#)

### Upwards view

[Upwards view](#)

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## Surface strained flow in 3D cylindrical geometry

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### Velocity magnitudes (top and left) and 2 isosurfaces of helicity (right)

[marangoni\\_re5600\\_lh45e-1.mp4](#)

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## 2D Flow past an oscillating cylinder

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### Vorticity field for 2 frequencies

[oscillating\\_cyl\\_vorticity\\_cmpf0.95\\_f1.2\\_a0.5.mp4](#)

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## 2D Flow past a heated square-cylinder

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$Re=50$ ,  $Ra=5 \cdot 10^6$

sunfluidh

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### 3D shear-layer driven cavity flow (1)

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$\text{Re} = 7826$  - **Simulation with upstream forcing term**  
**isosurface of Q-criterion coloured with velocity**

[movie\\_cav3d\\_r2\\_re7826\\_forcing.mp4](#)

[About this dataset ...](#)

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### 3D shear-layer driven cavity flow (2)

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$\text{Re} = 7826$  - **Simulation without upstream forcing term**  
**isosurface of Q-criterion coloured with velocity**

[movie\\_cav3d\\_r2\\_re7826\\_noforcing.mp4](#)

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From:

<https://sunfluidh.limsi.fr/> - **Documentation du code de simulation numérique SUNFLUIDH**

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Last update: **2021/12/15 15:02**

