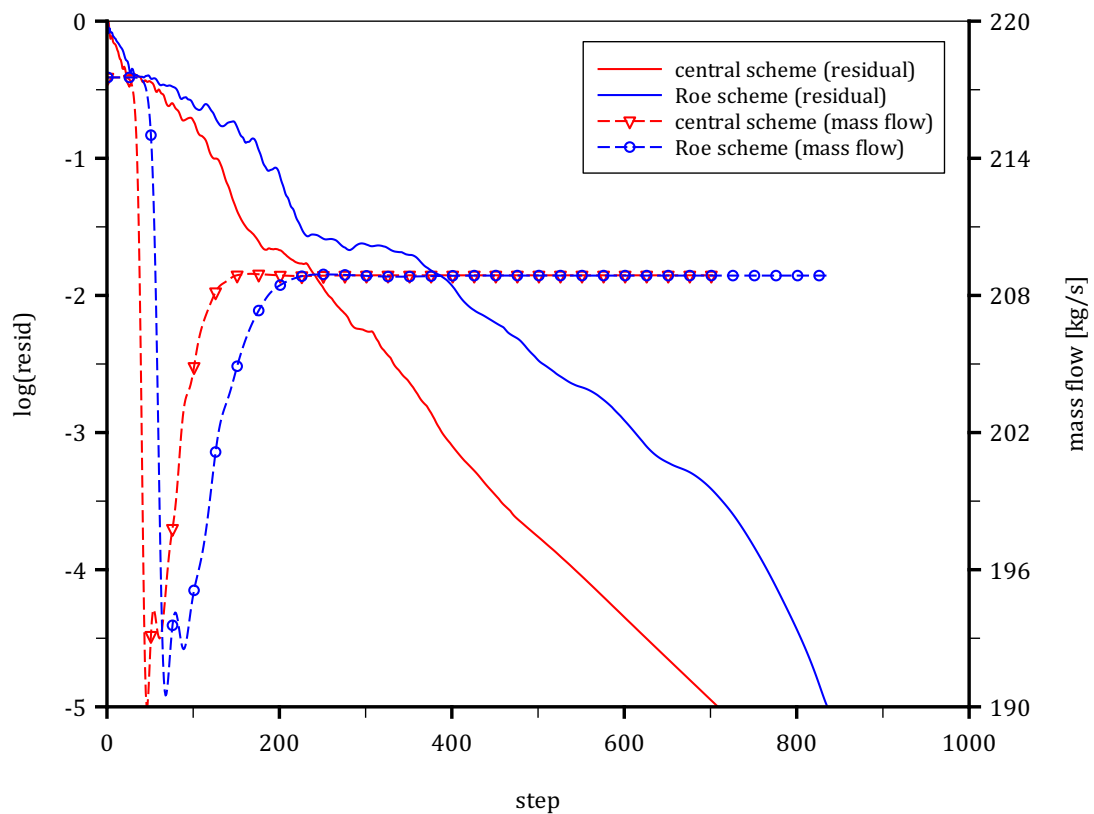# Solution of 2-D Euler Equations: Channel with Circular Bump
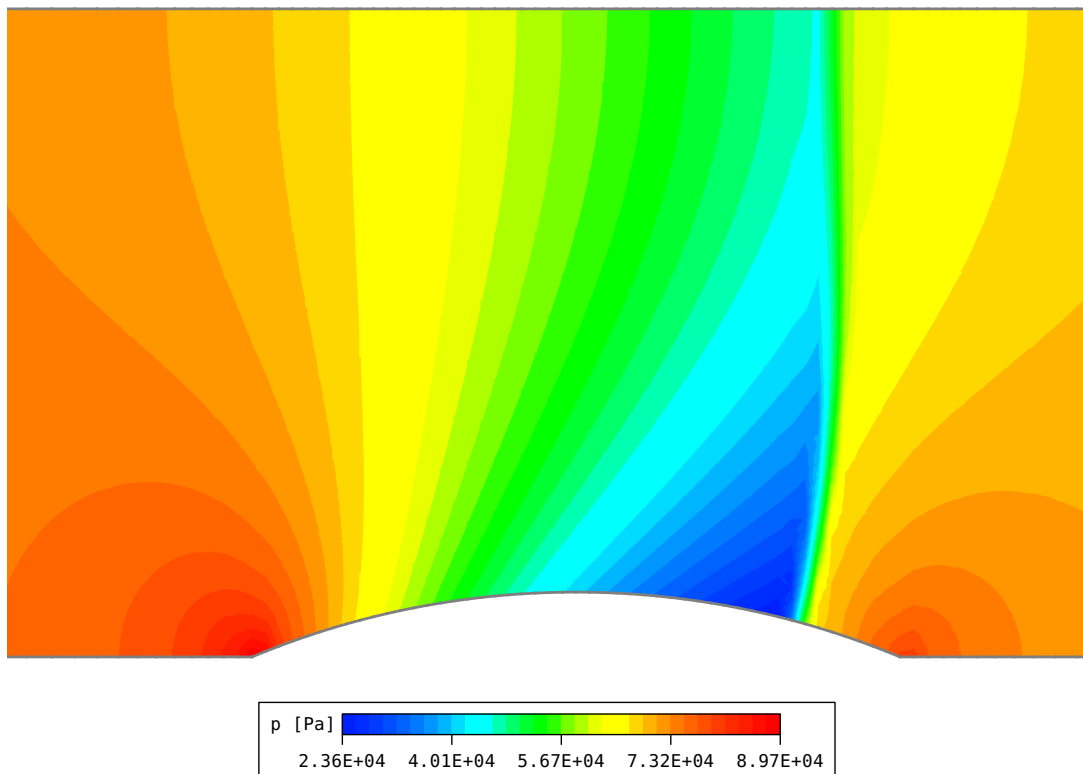
Spatial discretization schemes:

- Central scheme with scalar artificial dissipation:
  $\sigma = 7.5, \varepsilon = 0.8, k^{(2)} = 0.5, k^{(4)} = 1/128$

- Roe's upwind scheme:
  $\sigma = 5.0, \varepsilon = 1.0, K = 0.5$
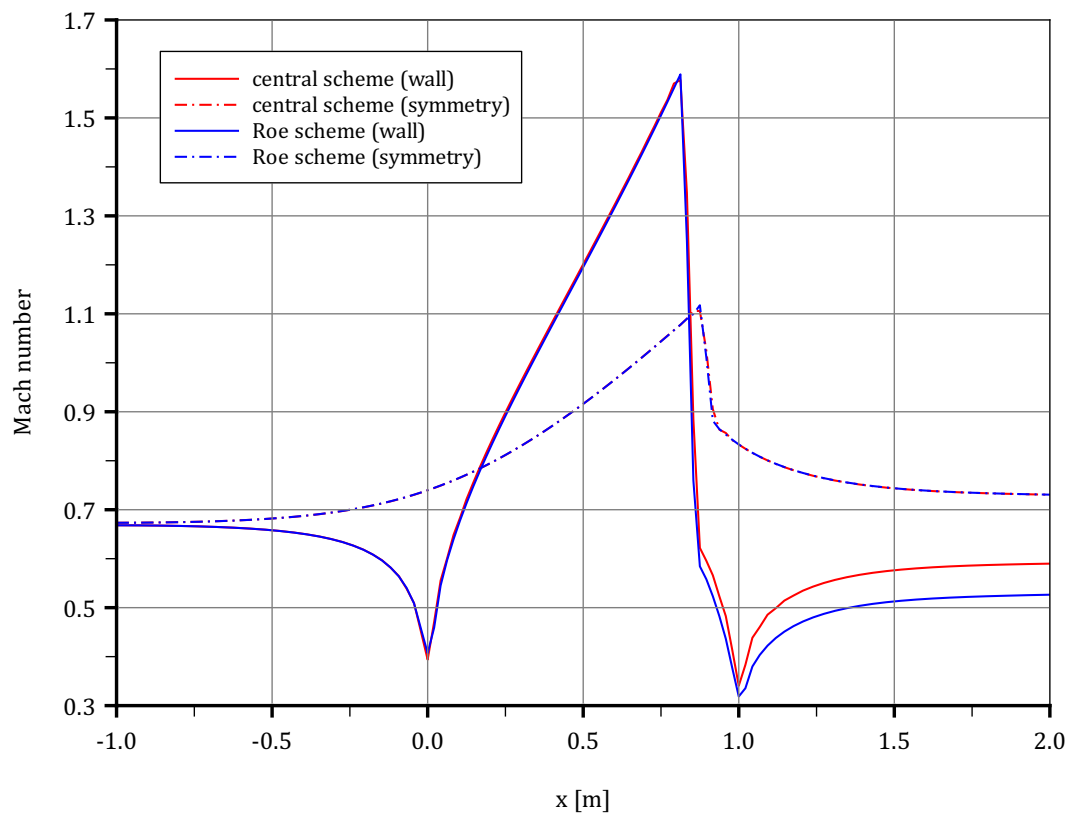
Boundary conditions:
$p_{t,inl} = 1.0 \cdot 10^5 \, \text{Pa}, T_{t,inl} = 300.0 \, \text{K}, p_{out} = 7.0 \cdot 10^4 \, \text{Pa}.$
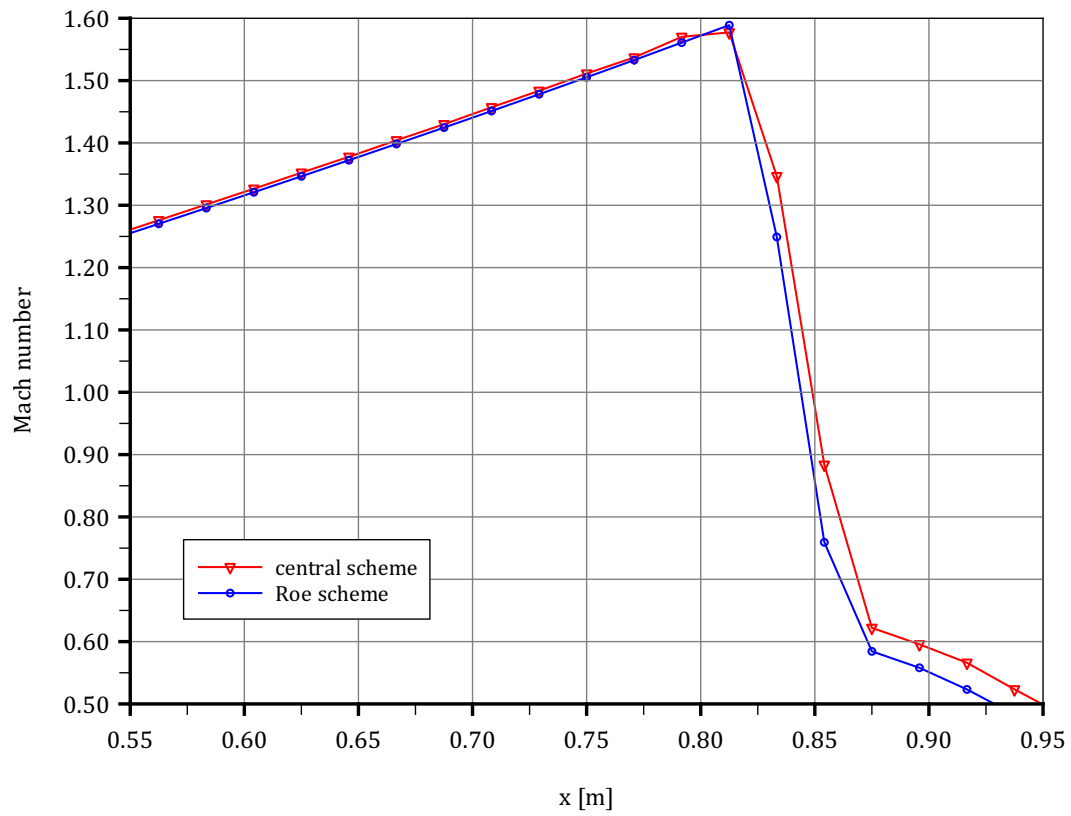

Convergence history.

Detail of pressure distribution inside the channel (Roe scheme).

Mach number over channel length.

Detail of Mach number distribution over channel wall.