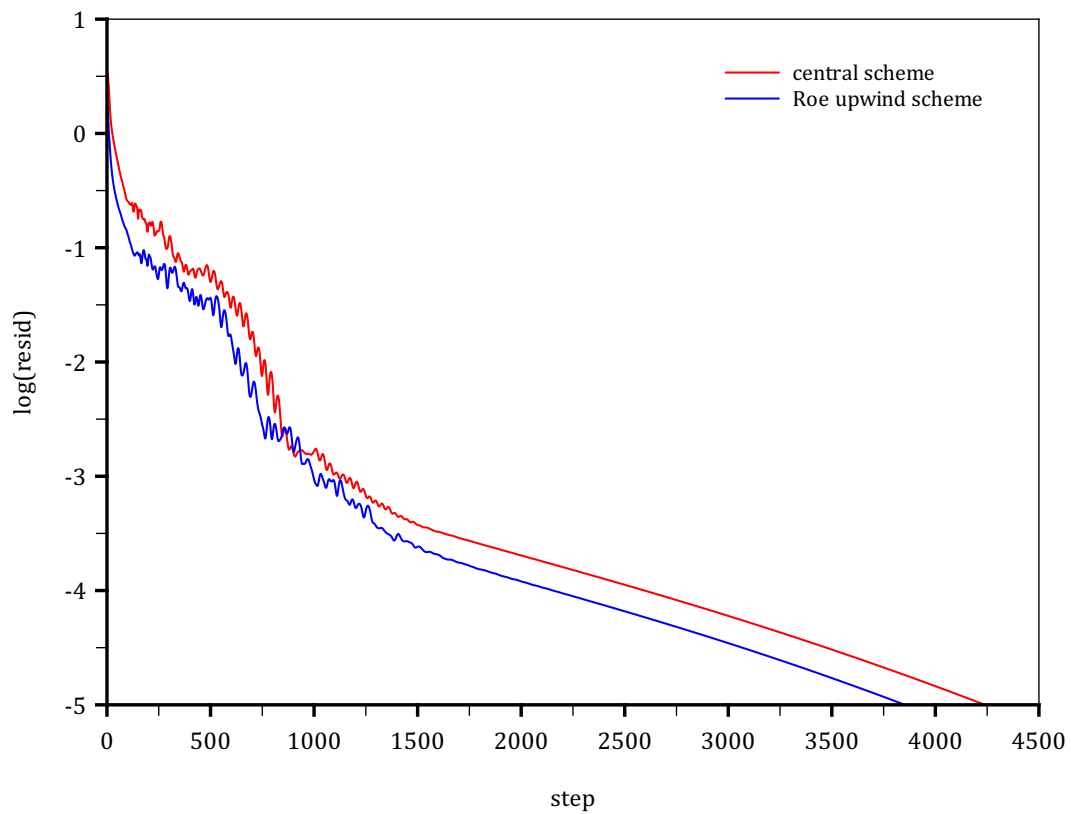# Solution of 2-D Navier-Stokes Equations: Laminar Flat Plate
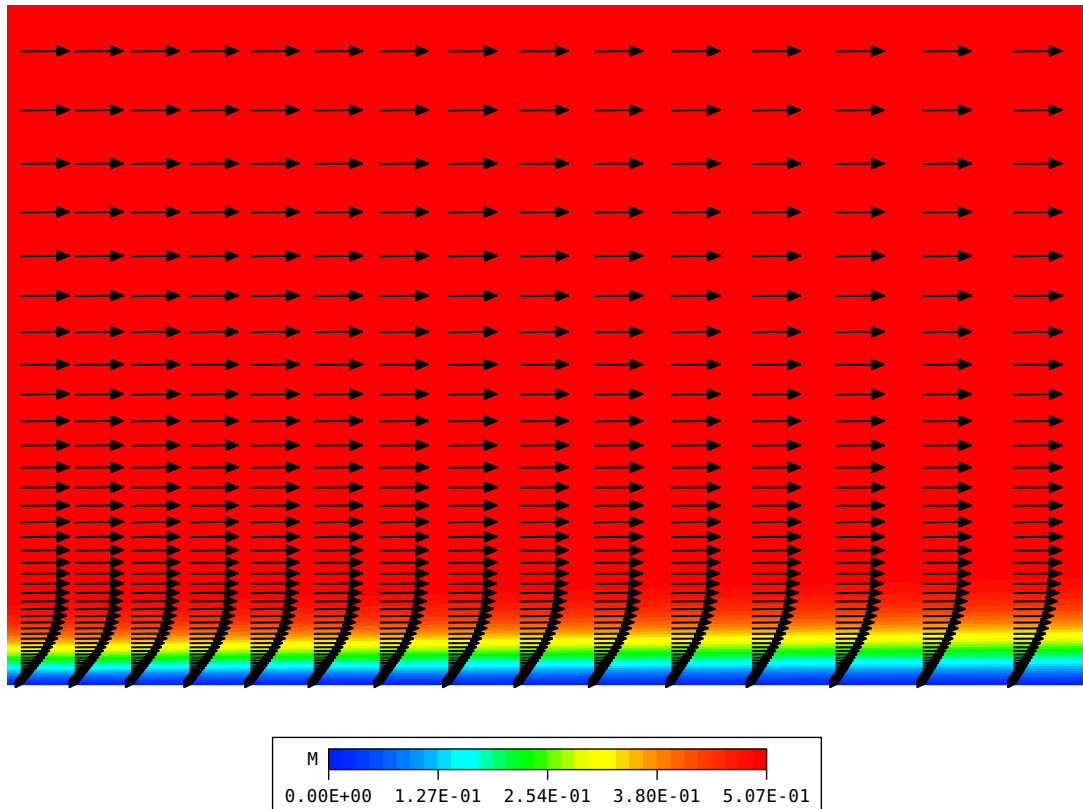
Spatial discretization schemes:
- Central scheme with scalar artificial dissipation:
  $\sigma = 7.5, \varepsilon = 0.8, k^{(2)} = 0.0, k^{(4)} = 1/256$

- Roe's upwind scheme:
  $\sigma = 5.0, \varepsilon = 1.0, K = 100$
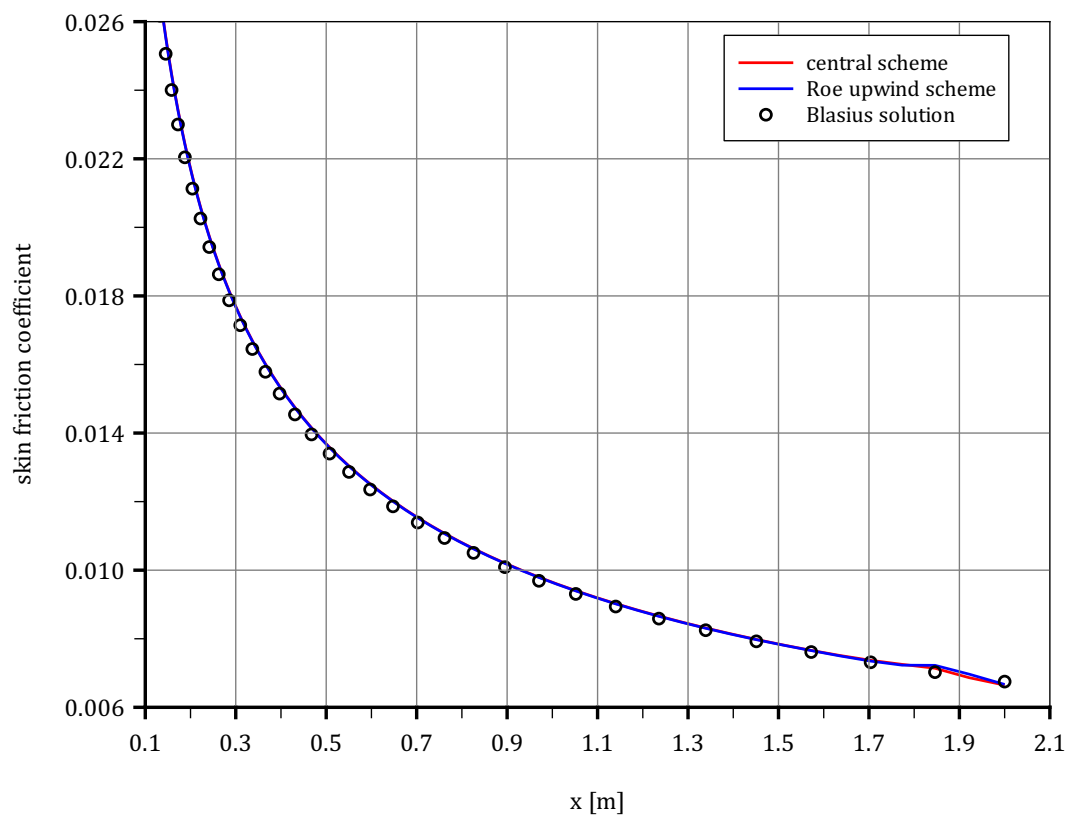
Boundary conditions:
$M_\infty = 0.5, p_\infty = 1.0 \cdot 10^5 \,\text{Pa}, T_\infty = 288.15\,\text{K}, Re = 5000.$

Convergence history.

Mach number distribution and velocity vectors (Roe's scheme).

Distributiohn of the skin friction coefficient along the wall.