

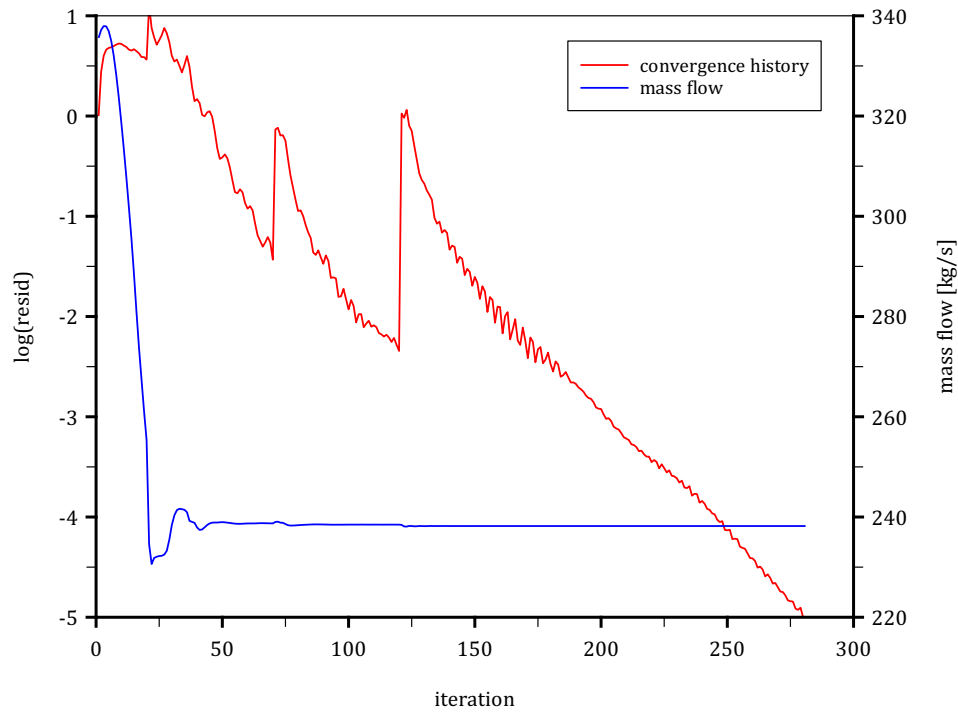
## Solution of Quasi 1-D Euler Equations (Laval Nozzle)

Roe's upwind scheme and multigrid with 5 grid levels:

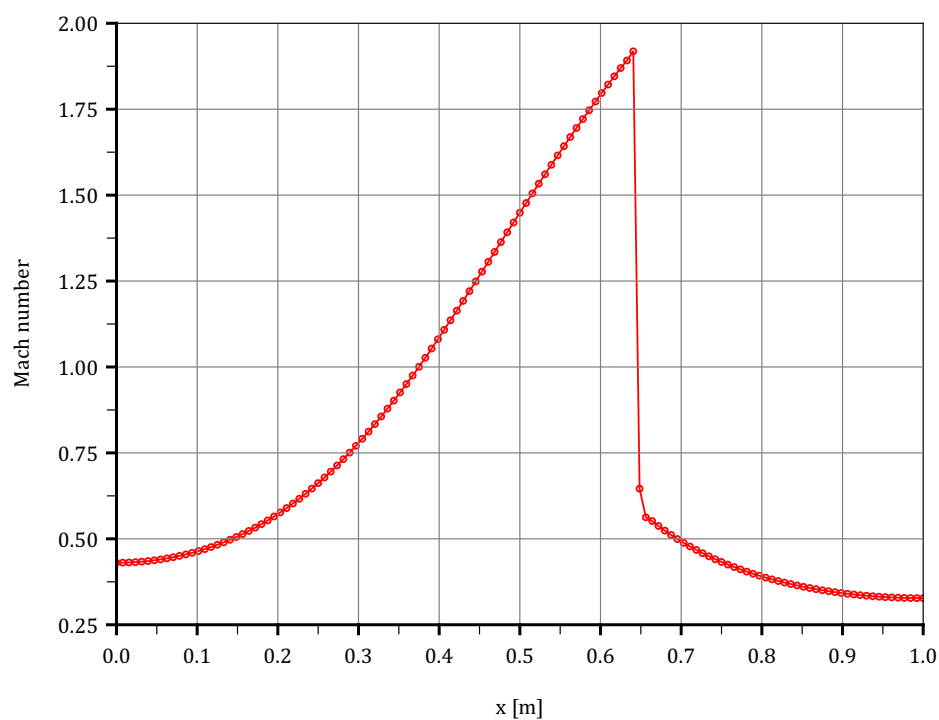
$\sigma = 4.5$ ,  $\varepsilon = 0.8$ , limiter coeff.  $K = 1.5$ , entropy correction coeff.  $\delta = 0.05 \cdot c$ .

Boundary conditions:

$p_{t,in} = 1.0 \cdot 10^5$  Pa,  $T_{t,in} = 288.0$  K,  $p_{out} = 7.0 \cdot 10^4$  Pa.



Convergence history.



Mach number distribution over nozzle length.