

Wall flux computation issue

Hemisphere

Simulation conditions

$M=5.0$

$T_{inf} = 212 \text{ K}$

$T_w = 212 \text{ K}$

$Re = 2.193946E+05$

Axisymmetric simulation

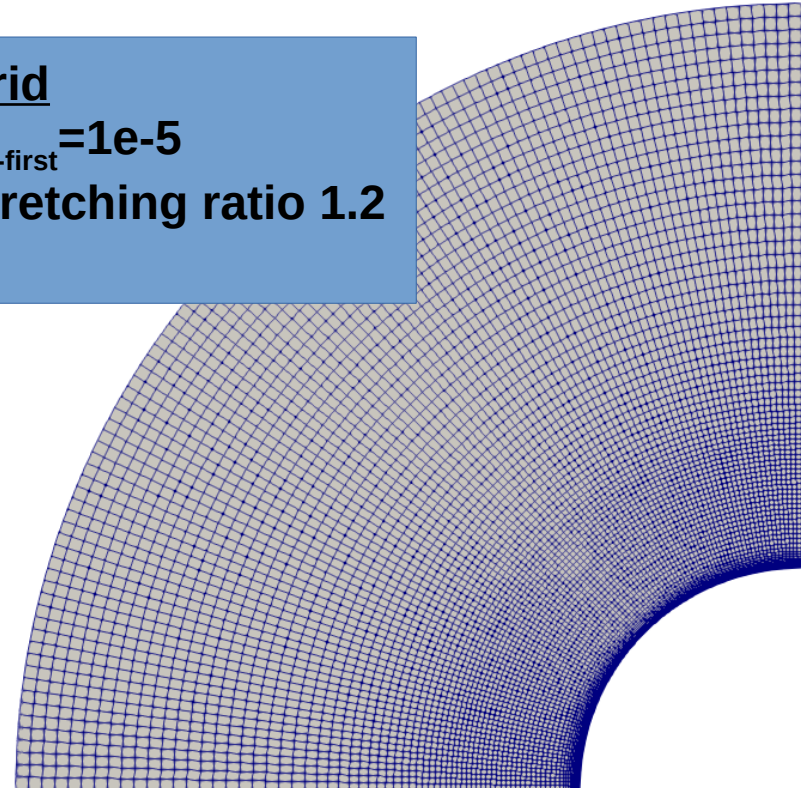
Laminar flow simulation

SLAU2 convective numerical scheme

Grid

$\Delta_{s-first} = 1e-5$

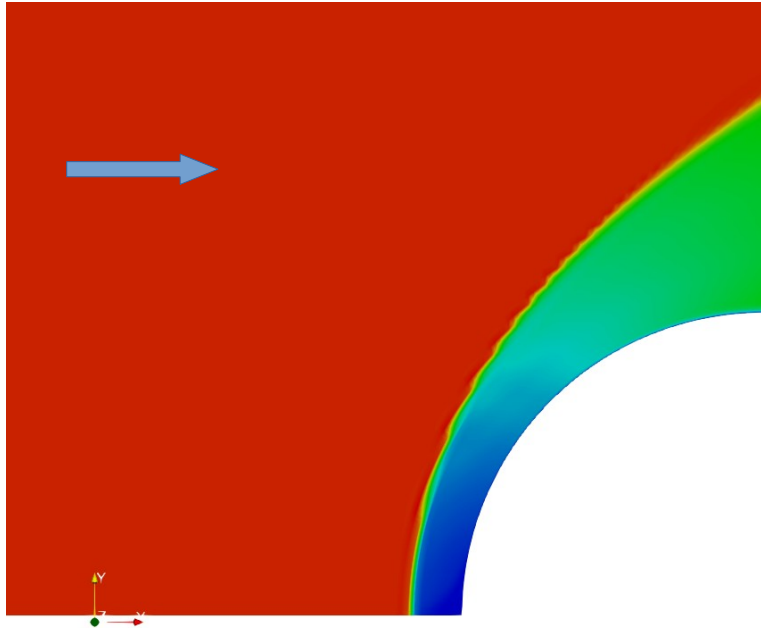
Stretching ratio 1.2



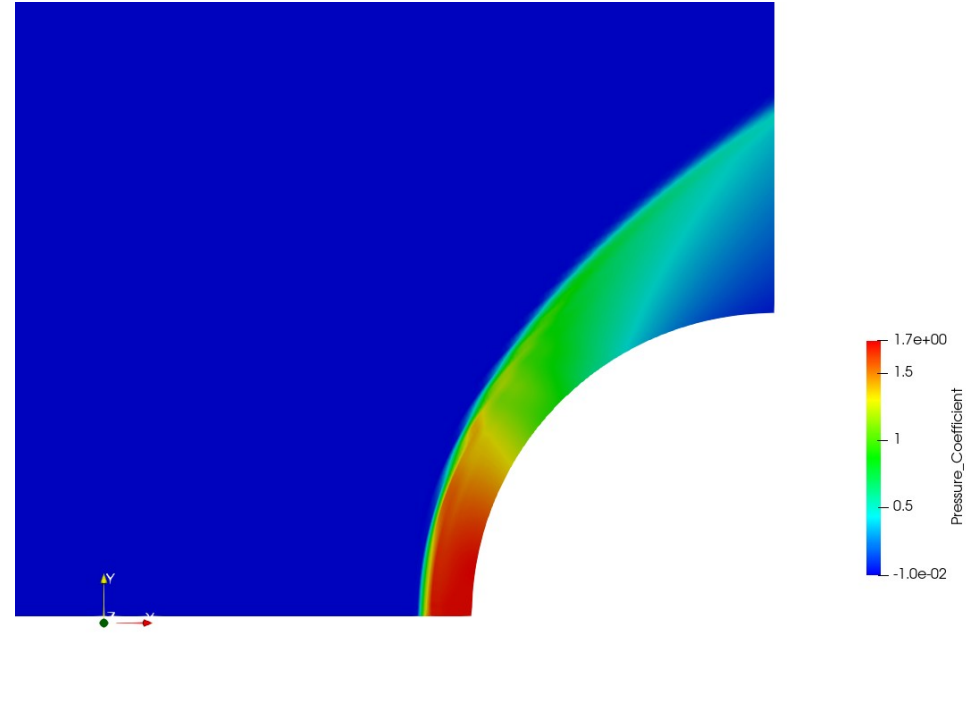
Reference: JAXA-RR-05-001E

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Mach Palette

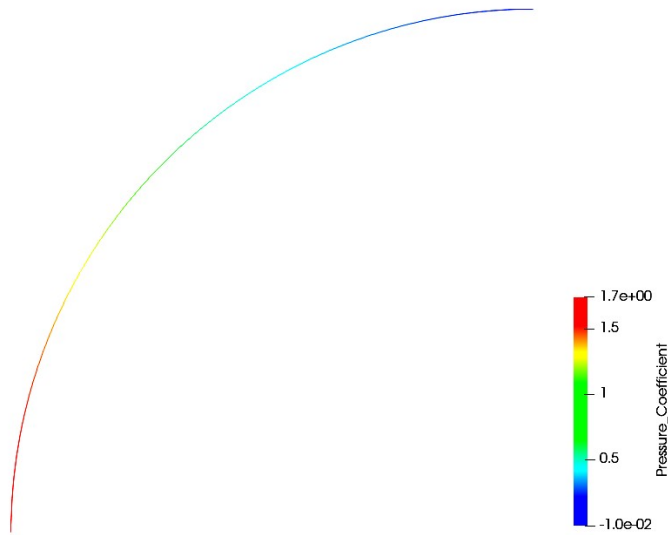


C_p Palette

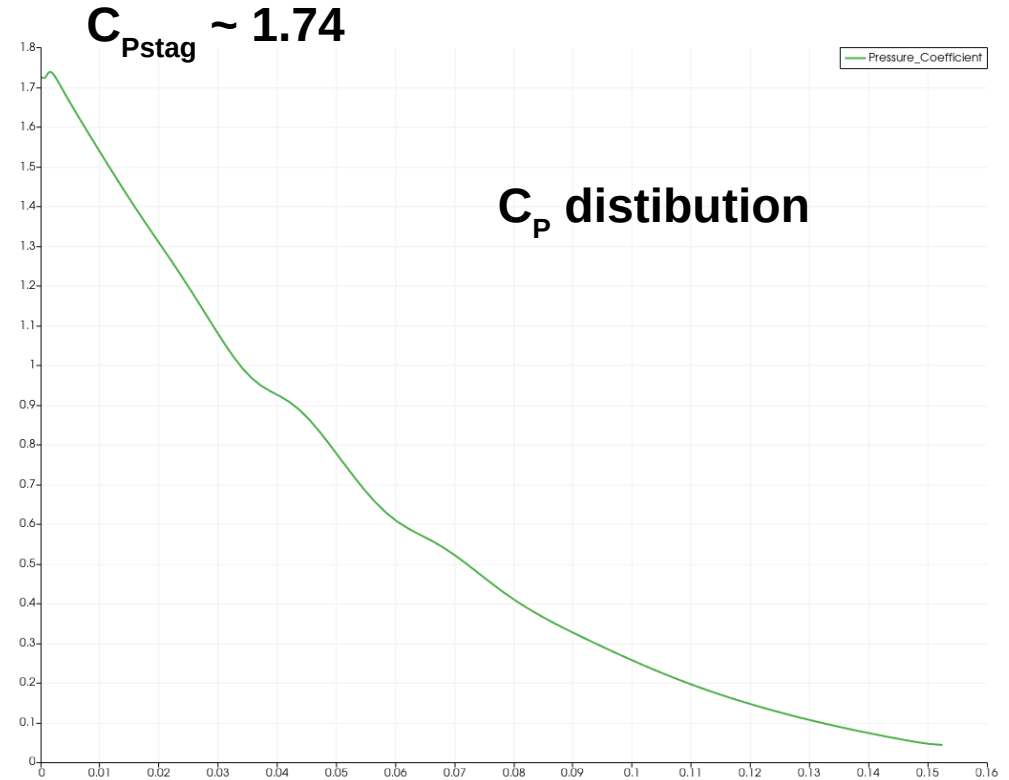


Both look good

C_p distribution



C_p wall



Heat flux distribution

h_{f-stag} unphysical dip and nearby peak value is $<6 \text{ w/cm}^2$

It should be around 10.6 w/cm^2

Changing Convective numerical scheme did not help

