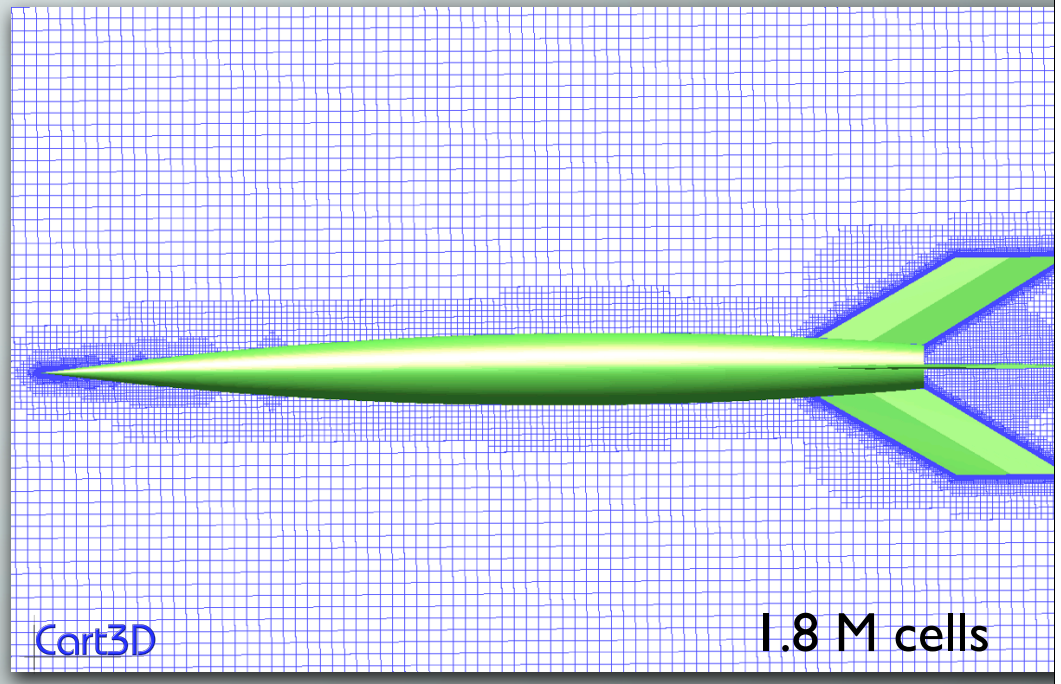
NACA RM-10

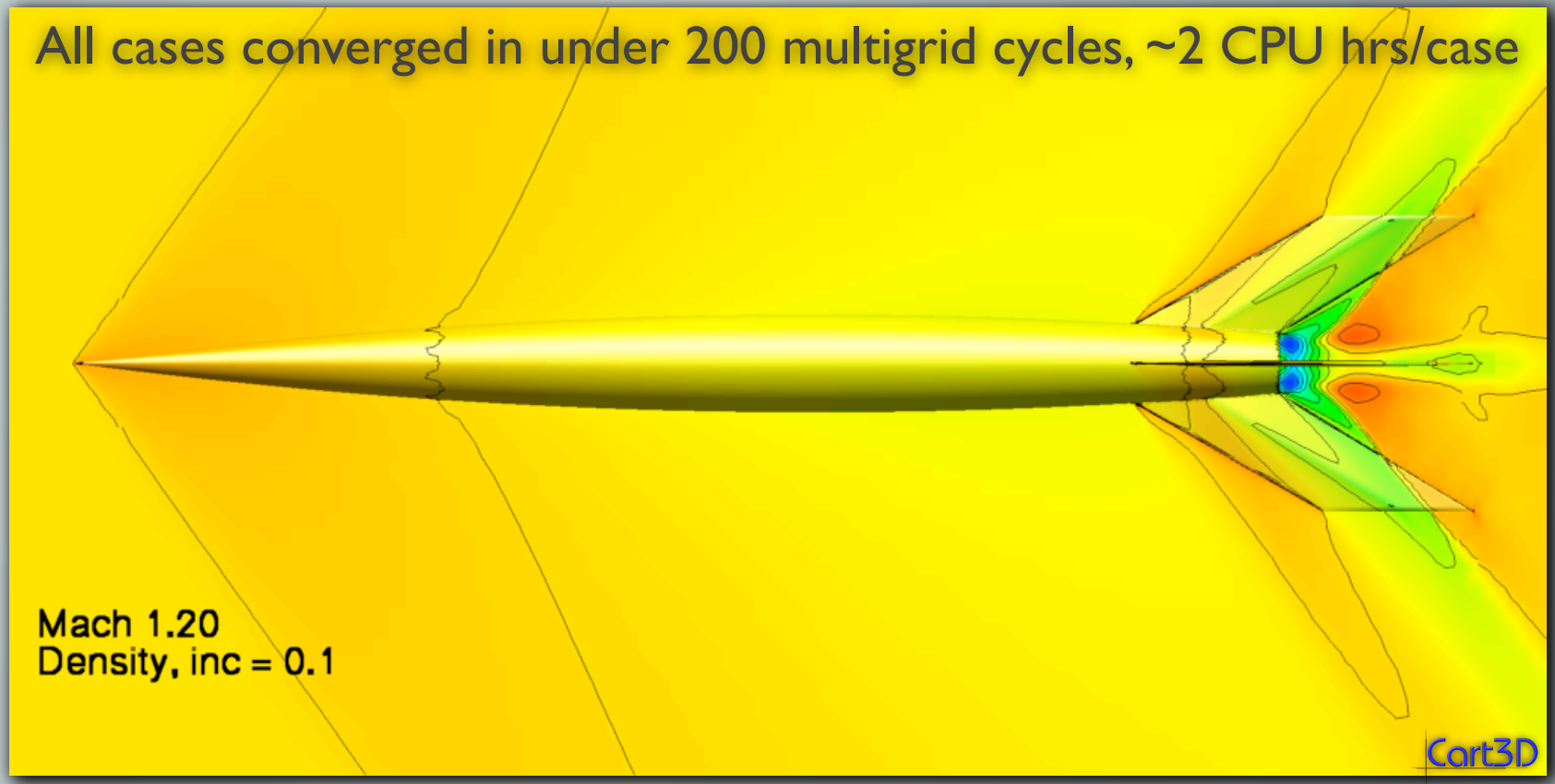
A posteriori viscous corrections

- High-quality zero-lift drag data from NACA TR-1160
- Cases include transonic-supersonic Mach numbers with weak viscous/inviscid interaction
- Motivation for elliptic solve was viscous correction for general geometries
- Use in "single-pass" mode is essentially free



NACA RM-10

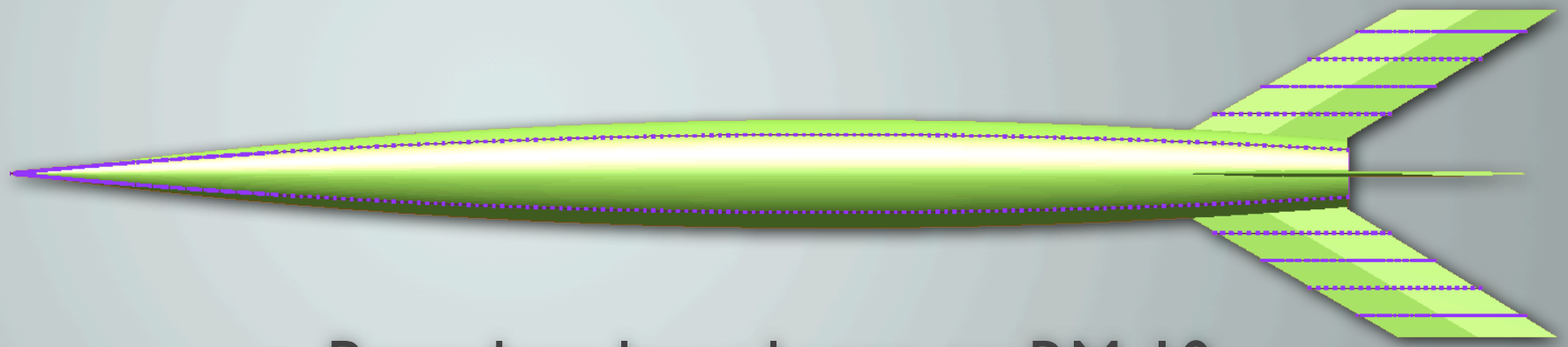
Mach sweep, M_∞ = 0.8-2.5 @ α = 0°



Density Contours

NACA RM-10

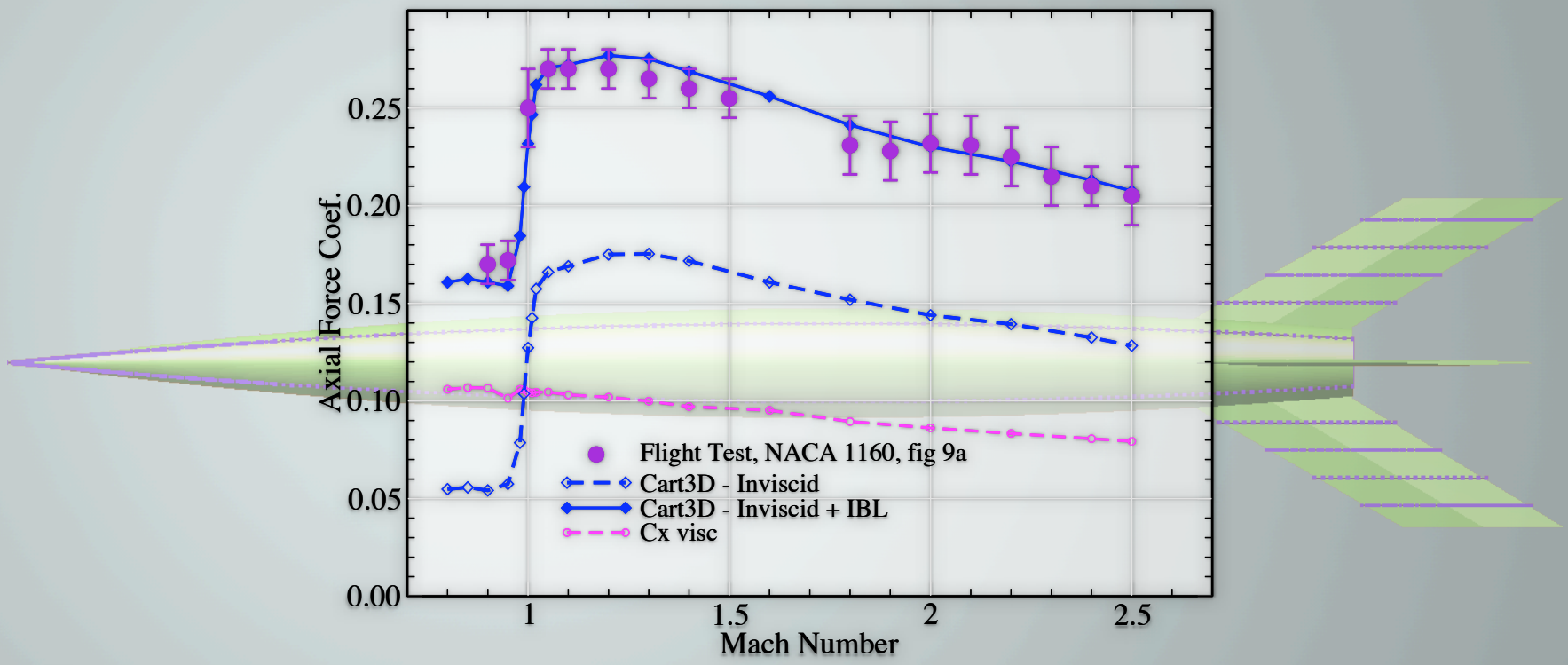
Mach sweep, M_∞ = 0.8-2.5 @ α = 0°



Boundary-layer loops on RM-10

NACA RM-10

Mach sweep, M_∞ = 0.8 – 2.5, Re_D = 35x10^6 – 140x10^6, α = 0°



- Good agreement for both axial force and skin-friction estimates
- Single-pass estimate is extremely cheap & robust
- No base correction for power off