

Numerical analysis on high-temperature Hypersonic flow

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● Abstract

Numerical simulation on high-temperature shock tunnel HIEST

● Reasons for using of JSS2

Requirement for huge numerical simulation.

● Achievements of the Year

Three component aerodynamic coefficients of Hyflex lifting body model were obtained.

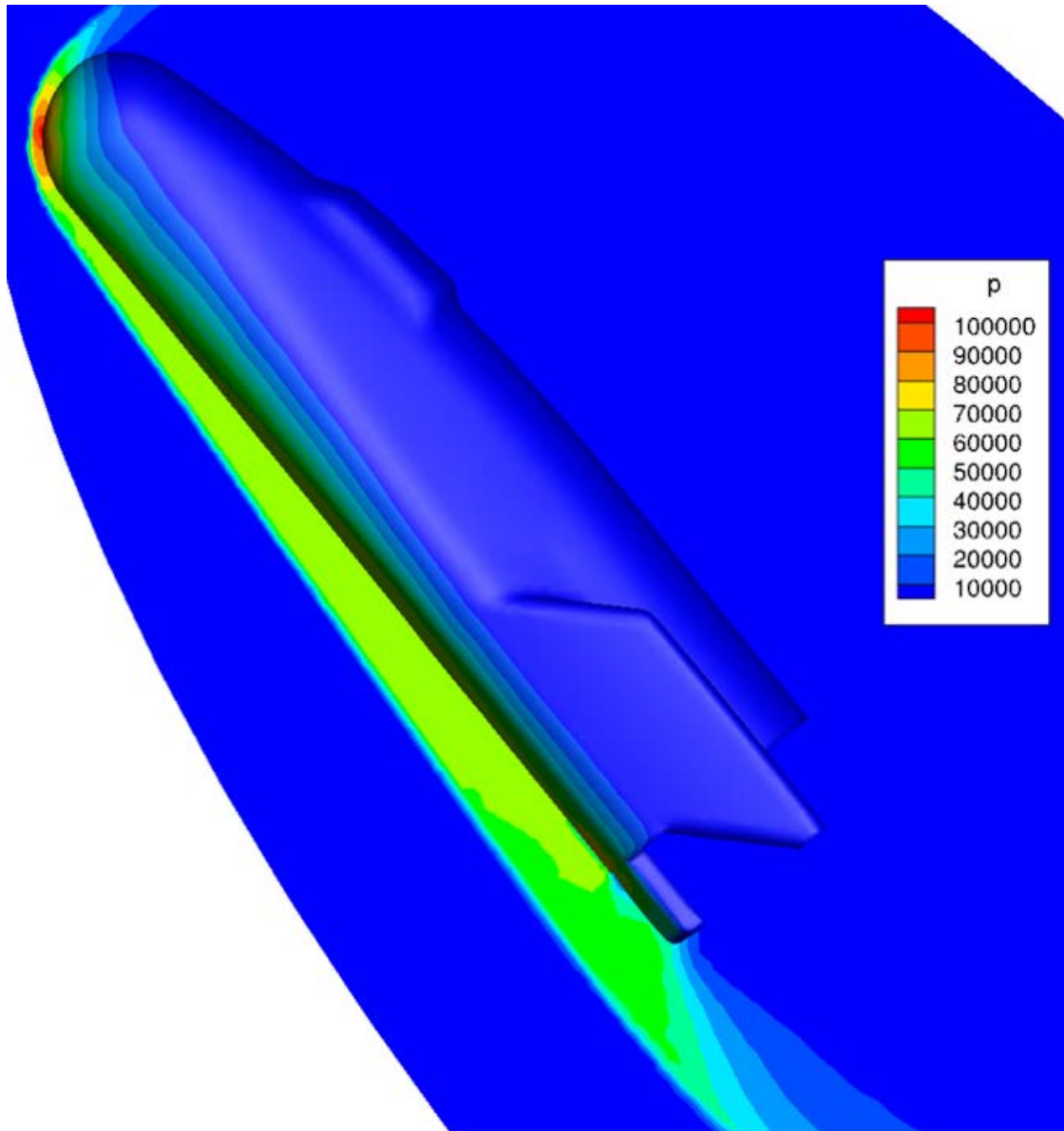


Fig.1 Pressure contour around Hyflex reentry vehicle ($V=3\text{km/s}$)

● **Publications**

● Peer-reviewed papers

- 1) Master thesis, "Numerical analysis of hypersonic flow around lifting body vehicle model", Tohoku Univ. 2018

● Usage of JSS2

● Computational Information

Parallelization Methods	MPI
Thread Parallelization Methods	Automatic Parallelizatio
Number of Processes	2 - 100
Elapsed Time per Case	100.00 hours

● Resources Used

Fraction of Usage in Total Resources*1 (%): 0.11

Details

Computing Resources		
System Name	Amount of Core Time (core x hours)	Fraction of Usage*2 (%)
SORA-MA	880,584.26	0.12
SORA-PP	0.00	0.00
SORA-LM	0.00	0.00
SORA-TPP	0.00	0.00

File System Resources		
File System Name	Storage assigned(GiB)	Fraction of Usage*2 (%)
/home	476.84	0.33
/data	9,765.63	0.18
/ltmp	1,953.13	0.15

Archiver Resources		
Archiver System Name	Storage used(TiB)	Fraction of Usage*2 (%)
J-SPACE	0.00	0.00

*1 Fraction of Usage in Total Resources: Weighted average of three resource types (computing, file system, and archiver)

*2 Fraction of Usage: Percentage of usage relative to each resource used in one year