

## Aerothermodynamic data of Mars aerocapture by JONATHAN

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### ● Abstract

To obtain aerothermodynamic data of Mars aerocapture.

### ● Reasons for using JSS2

It is necessary to use JONATHAN.

### ● Achievements of the Year

Heat flux distribution around aeroshell was obtained by JONATHAN. As a result, heat flux at stagnation point was about 1.2 MW/m<sup>2</sup>. In addition, even in Martian atmosphere, heat flux of aftbody is much smaller than that of forebody and it is enough large for heat flux of aftbody to assume 1/10 of heat flux at stagnation point.

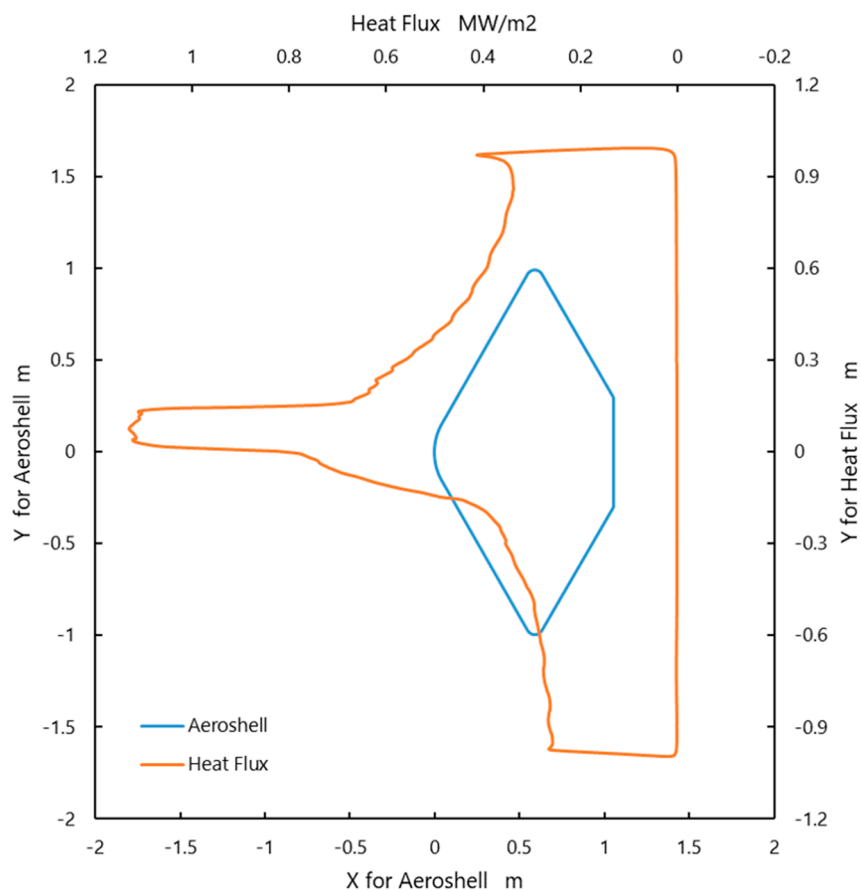


Fig. 1: Heat flux distribution around aeroshell

## ● Publications

N/A

## ● Usage of JSS2

### ● Computational Information

Process Parallelization Methods	MPI
Thread Parallelization Methods	OpenMP
Number of Processes	49
Elapsed Time per Case	12 Hour (s)

### ● Resources Used

Fraction of Usage in Total Resources<sup>\*1</sup> (%): 0.04

## Details

Computational Resources		
System Name	Amount of Core Time (core x hours)	Fraction of Usage* <sup>2</sup> (%)
SORA-MA	231,991.27	0.03
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* <sup>2</sup> (%)
/home	435.51	0.45
/data	8,519.49	0.15
/tmp	9,440.11	0.81

Archiver Resources		
Archiver Name	Storage Used (TiB)	Fraction of Usage* <sup>2</sup> (%)
J-SPACE	0.00	0.00

\*<sup>1</sup>: Fraction of Usage in Total Resources: Weighted average of three resource types (Computing, File System, and Archiver).

\*<sup>2</sup>: Fraction of Usage: Percentage of usage relative to each resource used in one year.