

Numerical analysis of deicing and anti-icing in jet engine

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Subject Category: Aeronautical Technology

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● Abstract

Technology development is conducted to solve the icing problem in jet engines.

● Reasons and benefits of using JAXA Supercomputer System

Used for visualization of numerical results.

● Achievements of the Year

The icing of the designed fan by JAXA was examined in advance by numerical analysis.

● Publications

N/A

● Usage of JSS

● Computational Information

Process Parallelization Methods	N/A
Thread Parallelization Methods	N/A
Number of Processes	1
Elapsed Time per Case	30 Minute(s)

● **JSS3 Resources Used**

Fraction of Usage in Total Resources*1(%): 0.05

Details

Computational Resources		
System Name	CPU Resources Used (core x hours)	Fraction of Usage*2(%)
TOKI-SORA	1,004,345.52	0.04
TOKI-ST	81,418.70	0.08
TOKI-GP	0.00	0.00
TOKI-XM	0.00	0.00
TOKI-LM	0.00	0.00
TOKI-TST	0.00	0.00
TOKI-TGP	0.00	0.00
TOKI-TLM	0.00	0.00

File System Resources		
File System Name	Storage Assigned (GiB)	Fraction of Usage*2 (%)
/home	11.78	0.01
/data and /data2	6,290.25	0.05
/ssd	264.63	0.04

Archiver Resources		
Archiver Name	Storage Used (TiB)	Fraction of Usage*2 (%)
J-SPACE	0.12	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.

- **ISV Software Licenses Used**

ISV Software Licenses Resources		
	ISV Software Licenses Used (Hours)	Fraction of Usage ^{*2} (%)
ISV Software Licenses (Total)	449.40	0.31

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