

The trial performance analysis of rotor blade.

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● Abstract

In order to judge the effectiveness of the commercial use, we estimate the rotor performance using the commercial CFD code and rotor craft CFD codes(rFlow3D and FaSTAR-Move)

● Reasons and benefits of using JAXA Supercomputer System

In order to estimate the rotor performance with high computational costs, a supercomputer is required. In addition, JSS3 has an environment for the use of computational tools, so we judge JSS3 is the most suitable supercomputer for our purpose.

● Achievements of the Year

The computational environment of the commercial CFD tool and the CFD code developed by JAXA is built. In addition, we were able to estimate the effectiveness of this computational environment by calculating the unsteady rotor performance analysis.

● Publications

N/A

● Usage of JSS

● Computational Information

Process Parallelization Methods	MPI
Thread Parallelization Methods	OpenMP
Number of Processes	1 - 360
Elapsed Time per Case	168 Hour(s)

● JSS3 Resources Used

Fraction of Usage in Total Resources*1(%): 0.04

Details

Computational Resources		
System Name	CPU Resources Used (core x hours)	Fraction of Usage*2(%)
TOKI-SORA	0.00	0.00
TOKI-ST	266,640.63	0.33
TOKI-GP	0.00	0.00
TOKI-XM	671.39	0.48
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	10.00	0.01
/data and /data2	1,124.00	0.01
/ssd	100.00	0.03

Archiver Resources		
Archiver 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.

● **ISV Software Licenses Used**

ISV Software Licenses Resources		
	ISV Software Licenses Used (Hours)	Fraction of Usage*2(%)
ISV Software Licenses (Total)	162.53	0.11

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