Digital tuft; measurement system of surface phisycal quantity for aircraft

Report Number: R19EDA102F00
Subject Category: Aeronautical Technology
URL: https://www.jss.jaxa.jp/en/ar/e2019/11582/

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Abstract

Development of measurement system of surface phisycal quantity for aircraft

Reasons and benefits of using JAXA Supercomputer System

The puropose is to perform CFD analyses for estimation of aerodynamic penalty of aircraft equipped with the developed sensor system. The advantage of JSS2 is its speed and preciseness of calculation.

Achievements of the Year

The calculation results show that the additional sensor susyem equipped on the surface of a target aircraft does not significantly affect the original aerodynamic features.

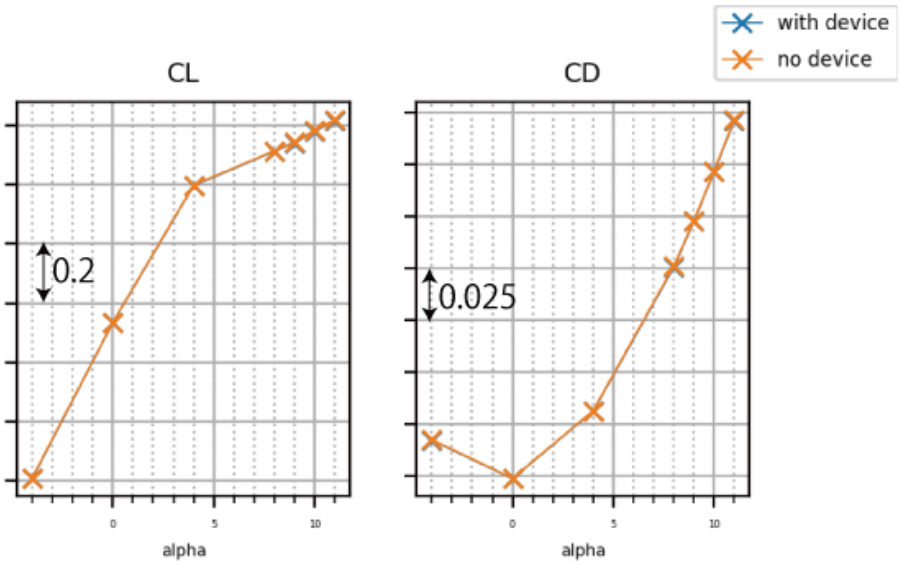

Fig. 1: CL and CD comparisons between with and without the sensor system

Fig. 2: Cp when the sensor system is equipped

Publications

N/A

Usage of JSS2

Computational Information

Process Parallelization Methods	MPI
Thread Parallelization Methods	N/A
Number of Processes	512
Elapsed Time per Case	5 Hour(s)

- **Resources Used**

Fraction of Usage in Total Resources[*1](%): 0.15

Details

Computational Resources		
System Name	Amount of Core Time (core x hours)	Fraction of Usage[*2](%)
SORA-MA	1,358,574.08	0.17
SORA-PP	2,891.98	0.02
SORA-LM	21.82	0.01
SORA-TPP	0.00	0.00

File System Resources		
File System Name	Storage Assigned (GiB)	Fraction of Usage*2(%)
/home	3.97	0.00
/data	4,092.85	0.07
/ltmp	813.80	0.07

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.