Precise Orbit Determination by using MADOCA on JSS2

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Subject Category：Space Technology

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● **Abstract**

Satellite Navigation Unit has been generating the precise orbit and clock products of GNSS satellites by using MADOCA (Multi-GNSS Advanced Demonstration tool for Orbit and Clock Analysis), and been distributing to user via network routinely. On the JSS2, we aim to realize fast computation for the long-term data analysis and simulation.

https://ssl.tksc.jaxa.jp/madoca/public/public_index_en.html

● **Reasons for using of JSS2**

To improve of the MADOCA products accuracy, we need to do long-term data analysis. By using JSS2, we have been expecting the reduction of the data analysis time.

● **Achievements of the Year**

In this financial year, we just installed and tested the MADOCA. And, we confirmed that the test result was agreed with the result which calculated on the general-purpose PC in the permissible range.

● **Publications**

N/A

🔵 Usage of JSS2

● Computational Information

Parallelization Methods	N/A
Thread Parallelization Methods	OpenMP
Number of Processes	1
Elapsed Time per Case	20.00 minutes

● Resources Used

Fraction of Usage in Total Resources*1 (%): 0.02

Details

Computing Resources		
System Name	Amount of Core Time (core x hours)	Fraction of Usage*2 (%)
SORA-MA	0.00	0.00
SORA-PP	97.52	0.00
SORA-LM	4.08	0.00
SORA-TPP	14,251.68	1.59

File System Resources		
File System Name	Storage assigned(GiB)	Fraction of Usage*2 (%)
/home	095.37	0.07
/data	2,489.09	0.05
/ltmp	976.56	0.07

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