

Three-dimensional turbulent magnetic reconnection

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● Abstract

Magnetic reconnection is one of the most important basic processes in plasma physics. It helps building up models for various astronomical events. Most of these events have large system size, while the diffusion region where reconnection literally happens is small due to weak diffusivity of the astronomical environment. Therefore, big simulations which integrate large system size with small diffusion region is required to approach the realistic circumstance.

● Reasons for using of JSS2

The simulation of magnetic reconnection solves the big system size as well as the small diffusion region size. It requires the usage of huge core numbers and memory, which are supplied by JSS2.

● Achievements of the Year

The calculation has not finished yet. Therefore, no result can be shown.

● Publications

N/A

● Usage of JSS2

● Computational Information

Parallelization Methods	MPI
Thread Parallelization Methods	N/A
Number of Processes	64 - 2048
Elapsed Time per Case	40.00 hours

● 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	115,457.40	0.02
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*2 (%)
/home	481.61	0.33
/data	9,813.31	0.18
/ltmp	2,929.69	0.22

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