Multidisciplinary Cooperative Research Program 2025

Report of Contributions

https://project.ccs.tsukuba.ac.jp/e/MCRP2025

Contribution ID : 2 Type : MCRP-M

Formation and evolution of local galaxies

Email

mmori@ccs.tsukuba.ac.jp

Number of project members

10

Pegasus: Project code

[GALAXY]

Pegasus: Requested budget

7500 [5400]

Pegasus: Requested disk capacity (TB)

100 [20]

Pegasus: Disk larger than the standard value?

Yes

Miyabi project code

GALAXY [xg24i043]

Node-hour product for Miyabi-G

13400 [10854]

Node-hour product for Miyabi-C

8000 [6400]

Miyabi: Requested disk capacity (TB)

36 [6]

Miyabi: Disk larger than the standard value?

Yes

Primary author(s) : MORI, Masao (University of Tsukuba)

Track Classification : Astrophysics（宇宙分野）

Contribution ID : 3 Type : MCRP-S

Study on numerical library on many-core/GPU clusters

Email

daisuke@cs.tsukuba.ac.jp

Number of project members

3

Pegasus: Project code

[NUMLIB]

Pegasus: Requested budget

5000 [4400]

Pegasus: Requested disk capacity (TB)

[3]

Pegasus: Disk larger than the standard value?

No

Miyabi project code

None [xg24i003]

Node-hour product for Miyabi-G

15000 [14850]

Node-hour product for Miyabi-C

2000 [1782]

Miyabi: Requested disk capacity (TB)

[1]

Miyabi: Disk larger than the standard value?

No

Primary author(s) : TAKAHASHI, Daisuke (University of Tsukuba)

Track Classification : High-performance computing system（超高速計算システム分野）

Contribution ID : 5 Type : MCRP-M

Microscopic description of nuclear structure by ab initio large-scale shell-model calculations

Email

shimizu@nucl.ph.tsukuba.ac.jp

Number of project members

8

Pegasus: Project code

[NUCLSM]

Pegasus: Requested budget

20000 [17600]

Pegasus: Requested disk capacity (TB)

[10]

Pegasus: Disk larger than the standard value?

No

Miyabi project code

[xg24i012]

Node-hour product for Miyabi-G

50000 [49500]

Node-hour product for Miyabi-C

8000 [7040]

Miyabi: Requested disk capacity (TB)

[3]

Miyabi: Disk larger than the standard value?

No

Primary author(s) : SHIMIZU, Noritaka (Center for Computational Sciences, University of Tsukuba)

Track Classification : Nuclear Physics（原子核分野）

Contribution ID : 15 Type : MCRP-M

Research of Parallel I/O and Storage System

Email

tatebe@cs.tsukuba.ac.jp

Number of project members

16

Pegasus: Project code

[NBB]

Pegasus: Requested budget

20000 [17600]

Pegasus: Requested disk capacity (TB)

[100]

Pegasus: Disk larger than the standard value?

Yes

Miyabi project code

[xg24i002]

Node-hour product for Miyabi-G

50000 [49500]

Node-hour product for Miyabi-C

[0]

Miyabi: Requested disk capacity (TB)

[36]

Miyabi: Disk larger than the standard value?

Yes

Primary author(s) : TATEBE, Osamu (University of Tsukuba)

Track Classification : High-performance computing system（超高速計算システム分野）

Contribution ID : 16 Type : MCRP-M

Nucleon structure from lattice QCD at the physical point

Email

ssasaki@nucl.phys.tohoku.ac.jp

Number of project members

5

Pegasus: Project code

[NUCLFF]

Pegasus: Requested budget

80000 [14080]

Pegasus: Requested disk capacity (TB)

400 [100]

Pegasus: Disk larger than the standard value?

Yes

Miyabi project code

None [xg24i007]

Node-hour product for Miyabi-G

200000 [39600]

Node-hour product for Miyabi-C

[30000]

Miyabi: Requested disk capacity (TB)

140 [36]

Miyabi: Disk larger than the standard value?

Yes

Primary author(s) : SASAKI, Shoichi (Tohoku University)

Track Classification : Nuclear Physics（原子核分野）

Contribution ID : 25 Type : MCRP-M

origin of life and mechanisms of biomolecular reactions revealed by quantum chemical calculations

Email

mshoji@ccs.tsukuba.ac.jp

Number of project members

6

Pegasus: Project code

[CCSPHYSB]

Pegasus: Requested budget

15000 [11880]

Pegasus: Requested disk capacity (TB)

[20]

Pegasus: Disk larger than the standard value?

Yes

Miyabi project code

None [xg24i071]

Node-hour product for Miyabi-G

[0]

Node-hour product for Miyabi-C

5000 [3960]

Miyabi: Requested disk capacity (TB)

20 [6]

Miyabi: Disk larger than the standard value?

Yes

Primary author(s) : SHOJI, Mitsuo (Center for Computational Sciences, University of Tsukuba)

Track Classification : Life Science（生命分野）

Contribution ID : 30 Type : MCRP-L

Search for physics beyond the standard model from 2+1+1 Flavor Lattice QCD with the Physical Quark Masses

Email

ishikawa@theo.phys.sci.hiroshima-u.ac.jp

Number of project members

5

Pegasus: Project code

[LATTICE]

Pegasus: Requested budget

80000 [72000]

Pegasus: Requested disk capacity (TB)

[300]

Pegasus: Disk larger than the standard value?

Yes

Miyabi project code

None [xg24i006]

Node-hour product for Miyabi-G

200000 [180000]

Node-hour product for Miyabi-C

30000 [27000]

Miyabi: Requested disk capacity (TB)

[140]

Miyabi: Disk larger than the standard value?

Yes

Primary author(s) : ISHIKAWA, Ken-Ichi (Hiroshima University)

Track Classification : Particle Physics（素粒子分野）

Contribution ID : 38 Type : MCRP-L

Calculation of physical quantities of hadrons near physical quark masses from lattice QCD

Email

yamazaki@het.ph.tsukuba.ac.jp

Number of project members

5

Pegasus: Project code

[LATNUC]

Pegasus: Requested budget

[80000]

Pegasus: Requested disk capacity (TB)

[200]

Pegasus: Disk larger than the standard value?

Yes

Miyabi project code

None [xg24i008]

Node-hour product for Miyabi-G

[200000]

Node-hour product for Miyabi-C

[30000]

Miyabi: Requested disk capacity (TB)

[140]

Miyabi: Disk larger than the standard value?

Yes

Primary author(s) : YAMAZAKI, Takeshi (University of Tsukuba)

Track Classification : Particle Physics（素粒子分野）

Contribution ID : 49 Type : MCRP-M

AI-driven climate and weather predictions

Email

doan.van.gb@u.tsukuba.ac.jp

Number of project members

2

Pegasus: Project code

[AICAST]

Pegasus: Requested budget

20000 [11200]

Pegasus: Requested disk capacity (TB)

100 [10]

Pegasus: Disk larger than the standard value?

No

Miyabi project code

AICAST [xg25i049]

Node-hour product for Miyabi-G

50000 [31500]

Node-hour product for Miyabi-C

8000 [6400]

Miyabi: Requested disk capacity (TB)

36 [3]

Miyabi: Disk larger than the standard value?

No

Primary author(s) : Prof. DOAN, Quang-Van

Track Classification : Global environment(地球環境分野)

Contribution ID : 57 Type : MCRP-M

Non-perturbative renormalization for nucleon structure in lattice QCD

Email

rtsuji@post.kek.jp

Number of project members

5

Pegasus: Project code

[NUCLRE]

Pegasus: Requested budget

80000 [14400]

Pegasus: Requested disk capacity (TB)

400 [100]

Pegasus: Disk larger than the standard value?

Yes

Miyabi project code

None [xg25i057]

Node-hour product for Miyabi-G

200000 [40500]

Node-hour product for Miyabi-C

30000 [5760]

Miyabi: Requested disk capacity (TB)

140 [36]

Miyabi: Disk larger than the standard value?

Yes

Primary author(s) : TSUJI, Ryutaro

Track Classification : Particle Physics(素粒子分野)

Contribution ID : 67 Type : MCRP-M

First-principles calculation of optical response of meta and bulk surfaces

Email

yabana@nucl.ph.tsukuba.ac.jp

Number of project members

3

Pegasus: Project code

TDDFT [None]

Pegasus: Requested budget

[0]

Pegasus: Requested disk capacity (TB)

[0]

Pegasus: Disk larger than the standard value?

No

Miyabi project code

None [xg24i040]

Node-hour product for Miyabi-G

50000 [34650]

Node-hour product for Miyabi-C

8000 [7040]

Miyabi: Requested disk capacity (TB)

[3]

Miyabi: Disk larger than the standard value?

No

Primary author(s) : YABANA, Kazuhiro

Track Classification : Material Science（物質科学分野）

Contribution ID : 70 Type : MCRP-M

First-principles Lattice QCD calculation of Hadron interactions

Email

doi@ribf.riken.jp

Number of project members

16

Pegasus: Project code

[HALQCD]

Pegasus: Requested budget

2000 [1120]

Pegasus: Requested disk capacity (TB)

[25]

Pegasus: Disk larger than the standard value?

No

Miyabi project code

None [xg24i010]

Node-hour product for Miyabi-G

196300 [31500]

Node-hour product for Miyabi-C

[24900]

Miyabi: Requested disk capacity (TB)

[30]

Miyabi: Disk larger than the standard value?

Yes

Primary author(s) : DOI, Takumi (RIKEN)

Track Classification : Nuclear Physics（原子核分野）

Contribution ID : 74 Type : MCRP-M

On the cost-efficient model selection for foundation models

Email

tongliang.liu@sydney.edu.au

Number of project members

15

Pegasus: Project code

saic2025 [SAIC2025]

Pegasus: Requested budget

36000 [16000]

Pegasus: Requested disk capacity (TB)

400 [25]

Pegasus: Disk larger than the standard value?

No

Miyabi project code

None [xg25i074]

Node-hour product for Miyabi-G

112320 [45000]

Node-hour product for Miyabi-C

[0]

Miyabi: Requested disk capacity (TB)

140 [10]

Miyabi: Disk larger than the standard value?

No

Primary author(s) : Prof. LIU, Tongliang (The University of Sydney)

Track Classification : Computational informatics（計算情報学分野）

Contribution ID : 91 Type : MCRP-M

Quantum dynamics in nuclei and neutron stars

Email

nakatsukasa@nucl.ph.tsukuba.ac.jp

Number of project members

12

Pegasus: Project code

[NUCLDFT]

Pegasus: Requested budget

3000 [2400]

Pegasus: Requested disk capacity (TB)

[3]

Pegasus: Disk larger than the standard value?

No

Miyabi project code

[xg24i052]

Node-hour product for Miyabi-G

[0]

Node-hour product for Miyabi-C

5500 [4400]

Miyabi: Requested disk capacity (TB)

[3]

Miyabi: Disk larger than the standard value?

No

Primary author(s) : NAKATSUKASA, Takashi (University of Tsukuba)

Track Classification : Nuclear Physics（原子核分野）

Contribution ID : 105 Type : MCRP-M

First-principles study of dislocations and stacking faults in magnesium and magnesium alloys

Email

uemura.naoki@kuas.ac.jp

Number of project members

5

Pegasus: Project code

[KUASM6LB]

Pegasus: Requested budget

80000 [16000]

Pegasus: Requested disk capacity (TB)

400 [25]

Pegasus: Disk larger than the standard value?

No

Miyabi project code

[xg24i051]

Node-hour product for Miyabi-G

200000 [45000]

Node-hour product for Miyabi-C

30000 [6400]

Miyabi: Requested disk capacity (TB)

140 [10]

Miyabi: Disk larger than the standard value?

No

Primary author(s) : Dr UEMURA, Naoki (Kyoto University of Advanced Science)

Track Classification : Material Science（物質科学分野）

Contribution ID : 107 Type : MCRP-M

Development of Anharmonic Phonon Property Database using First-Principles Calculations

Email

mohnishi@ism.ac.jp

Number of project members

1

Pegasus: Project code

[APPD]

Pegasus: Requested budget

80000 [14400]

Pegasus: Requested disk capacity (TB)

[5]

Pegasus: Disk larger than the standard value?

No

Miyabi project code

None [xg25i107]

Node-hour product for Miyabi-G

200000 [40500]

Node-hour product for Miyabi-C

30000 [5760]

Miyabi: Requested disk capacity (TB)

[5]

Miyabi: Disk larger than the standard value?

No

Primary author(s) : OHNISHI, Masato (The Institute of Statistical Mathematics)

Track Classification : Material Science（物質科学分野）