Joint Usage/Research Center for Interdisciplinary Large-Scale Information Infrastructures 2017-2018 Joint Research Projects

2017-2018 Joint Research Projects　46 Projects (81 joint research centers)
【 International　3,　Industrial 1,　General 42 】
※Exploratory Joint Research Projects are adopted as well.

HPCI-JHPCN projects are marked with *
NA: Very large-scale numerical computation　　DA:Very large-scale data processing
IS:Very large-scale information systems　　　　NW:Very large capacity network technology

International Joint Research Projects

Project Title	Leader(Affiliation)	Category	Joint Research Center
*Development of next-generation quantum material research platform	Takeo Hoshi (Tottori University)	NA	Utokyo
*Development of Time-Reversal Method for Detecting Multiple Moving Targets Behind the Wall	Takeshi Nanri (Kyushu University)	NA	Kyushu
*Hierarchical low-rank approximation methods on distributed memory and GPUs	Rio Yokota (Tokyo Institute of Technology)	NA	Hokkaido, Utokyo, Tokyo Tech, Kyoto

Industrial Joint Research Project

Project Title	Leader(Affiliation)	Category	Joint Research Center
Development of numerical simulation techniques for geologic CO2 sequestration on post-peta scale platform	Hajime Yamamoto (Taisei Corporation)	NA	UTokyo

General Joint Research Projects（1/2）

Project Title	Leader(Affiliation)	Category	Joint Research Center
*Development of massively parallelized particle simulation code for fusion plasma research and visualization of the simulation results	Hiroaki OHTANI (National Institute for Fusion Science)	NA	Nagoya, Kyoto
*Massively-Parallelized Particle Simulation of Space Plasma Phenomena	Yohei Miyake (Kobe University)	NA	Hokkaido, Kyoto
*Development of parallel LES code for Magnetohydrodynamic Turbulence	Hideaki Miura (National Institute for Fusion Science)	NA	UTokyo
*Development and application of risk evaluation for heat stroke	Akimasa Hirata (Nagoya Institute of Technology)	NA	Tohoku
*Interaction between tubulence and a large ensemble of micro particles with internal degrees of freedom	Toshiyuki Gotoh (Nagoya Institute of Technology)	NA	Nagoya
*Flooding analysis of a large cruise ship using a large-scale particle method	Hirotada Hashimoto (Kobe University)	NA	Tokyo Tech
*Development of a high performance GPU code using the thermal LBM for very large scale simulations of turbulent heat transfer on complex solid-fluid interfaces	Kazuhiko Suga (Osaka Prefecture University)	NA	Tokyo Tech
*Large scale and multi-scale simulation of Solid particle – fluid coupled problem and it application to disaster mitigation and prevention	MItsuteru Asai (Kyushu University)	NA	Kyoto
*Development of Efficient Spatiotemporal Boundary Integral Equation Method and Applications to Simulations of Large Earthquakes	Ryosuke Ando (The University of Tokyo)	NA	UTokyo
*Development of high accurate analysis method of grain growth by fusing molecular dynamics method and phase-field method	Tomohiro Takaki (Kyoto Institute of Technology)	NA	Tokyo Tech
*Parallelization of general-purpose molecular dynamics software MODYLAS suitable for clusters with many cores and wide SIMD architectures	Yoshimichi Andoh (Nagoya University)	NA	Utokyo, Nagoya
*Development of real-time air flow simulation using lattice Boltmann method	Naoyuki Onodera (Japan Atomic Energy Agency)	NA	Tokyo Tech
*Optimizations of Jet Engine Blades Air Flow Simulation for Many-core Supercomputers	Tetsuya Hoshino (The University of Tokyo)	NA	UTokyo
*Mash-up of high-performance numerical computing and high-speed data transfer for large-scale data file transfer between universities and their demonstration experiments with real dataset	Ken T. Murata (National Institute of Information and Communications Technology)	IS	Tohoku, Nagoya, Kyoto, Kyushu
*Study of computer-assisted detection of lesions in medical images using Deep Learning	Issei Sato (The University of Tokyo)	DA	UTokyo
*Evaluation of large-scale reinforcement learning	Tomoyuki Kaneko (The University of Tokyo)	DA	UTokyo
*Large scale simulation of polydisperse multiphase flow with reaction and metastability	Akiko Matsuo (Keio University)	NA	Tohoku

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General Joint Research Projects（2/2）

Project Title	Leader(Affiliation)	Category	Joint Research Center
*Study of thinking networks by the trinity of user equipment, network edges, and cloud	Akihiro Nakao (The University of Tokyo)	NW	Hokkaido, Tohoku, Utokyo, Kyushu
*Extension of the AMR framework for supporting various architectures	Takashi Shimokawabe (The University of Tokyo)	NA	Utokyo, Tokyo Tech
*Remote Interactive In-Situ Visualization using Particle Data for Volume Visualization	Takuma Kawamura (Japan Atomic Energy Agency)	NW	Utokyo, Tokyo Tech, Nagoya
*Developments of particle methods with high accuracy and their applications to large-scale computational fluid dynamics	Yusuke Imoto (Tohoku University)	NA	Utokyo, Nagoya, Kyoto
*Enhancement of the GW space-time code for investigating organic-metal interface electronic structure	Susumu Yanagisawa (University of the Ryukyus)	NA	Tohoku
High-performance Randomized Matrix Computations for Big Data Analytics and Applications	Takahiro Katagiri (Nagoya University)	DA	Utokyo, TokyoTech, Nagoya
Optimisation of Fusion Plasma Turbulence Code toward Post-Petascale Era II	Shinya Maeyama (Nagoya University)	NA	Tokyo Tech, Nagoya
Large scale acoustic-fluid analysis on air-jet instruments and some pieces of acoustic equipment	Kin'ya Takahashi (Kyushu Institute of Technology)	NA	Hokkaido, Kyushu
Large-scale parallel simulation of seismic and tsunami waves for the study of mega-thrust earthquakes in subduction zones	Hiroshi Takenaka (Okayama University)	NA	Utokyo, Tokyo Tech
3-D modeling of seismic wave propagation through the Greenland ice sheet	Genti Toyokuni (Tohoku University)	NA	Tohoku, Utokyo
Ocean Modeling with a Manycore Supercomputer (Simulations of Ocean Circulation and Mixing in the Pan-Okhotsk Region)	Tomohiro Nakamura (Hokkaido University)	NA	Hokkaido, UTokyo
Development of Cartesian-mesh CFD for Moving Boundary Problems in Aerospace Applications	Daisuke Sasaki (Kanazawa Institute of Technology)	NA	Tohoku, Nagoya
High Performance Computing Environment Applied to Airframe and Thrust Design of Winged Rocket For Practical Use	Masahiro Kanazaki (Tokyo Metropolitan University)	NA	Hokkaido, Nagoya
GPU Accelerated Mass Scale Tsunami Simulation for Realtime Run-up Forecast	Shin Aoi (National Research Institute for Earth Science and Disaster Resilience)	NA	Tokyo Tech
International deployments and flexible collaborations with computing resources of HPCI-JHPCN system for a wide-area distributed platform with self-validation for fault and disaster tolerance	Hiroki Kashiwazaki (Osaka University)	IS	Hokkaido, Tohoku, Kyoto, Osaka, Kyushu
Numerical and Experimental collaborative study for breakthrough of high-Reynolds number turbulent flows and its application	Yoshinobu Yamamoto (University of Yamanashi)	NA,DA	Tohoku, Nagoya, Kyushu
Development of numerical methods for elastic wave propagation in heterogeneous and anisotropic materials and their application to nondestructive inspection	Takahiro Saitoh (Gunma University)	NA	Kyoto
Expansion of industrial use of innovative design technology for transportation equipment using micro flow-control device by large-scale simulation	Kengo Asada (Tokyo University of Science)	NA	Tohoku
A study for demonstration on the building of a next generation applied aerodynamics research platform using a fast CFD code	Yuichi Matsuo (Japan Aerospace Exploration Agency)	NA	Hokkaido
Theory and Practice of Vector Processing for Data and Memory Centric Applications	Hiroaki Kobayashi (Tohoku University)	IS	Tohoku
Test and Evaluation on Wide-area Data Staging That Cooperates with Scheduler	Hirotake Abe (University of Tsukuba)	NW,IS	Utokyo, Osaka
A study on advanced parallel direct solver for a linear system appearing in the electronic structure calculation of conductive polymers	Takeshi Fukaya (Hokkaido University)	NA	Hokkaido, Utokyo, Kyoto
Construction of Universal Visualization as a Service (VaaS) on PRAGMA-ENT	Yasuhiro Watashiba (Nara Institute of Science and Technology)	IS	Osaka
Visualization and Statistical Modeling of Financial Big Data	Masayuki Jimichi (Kwansei Gakuin University)	NW	UTokyo
Proactive and Reactive Cyber Security	Yuji Sekiya (The University of Tokyo)	NW	UTokyo