Joint Usage/Research Center for Interdisciplinary Large-Scale Information Infrastructures 2014-2015 Joint Research Projects

2014-2015 Joint Research Projects　　34 Projects (56 joint research centers)
　※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
NW:Very large capacity network technology　　IS:Very large-scale information systems

Project Title	Leader (Affiliation)	Category	Joint Research Center
*Massively-Parallel Plasma Particle Simulation	Hideyuki Usui (Kobe University)	NA	Kyoto, Kyushu
*Practical study of JHPCN-DF (Jointed Hierarchical Precision Compression Number -Data Format) for efficient VR visualization of large data system	Katsumi Hagita (National Defense Academy of JAPAN)	NA	Hokkaido, Tohoku, Nagoya, Osaka
*Large scale simulation for innovation of fracture mechanics and nondestructive testing in infrastructure	Kazuyuki Nakahata (Ehime University)	NA	Kyoto
*Very large phase-field simulations for accurate prediction of solidification microstructure and its acceleration	Tomohiro Takaki (Kyoto Institute of Technology)	NA	Tokyo Tech
*Effect of Large Scale Coherent Motions on the Mass Transfer Rate in High-Reynolds-Number Wall Bounded Shear Flow	Yoshiyuki Tsuji (Nagoya University)	NA, DA	Nagoya
*High-resolution Weather Prediction Code based on High-productivity Framework for Multi-GPU computation	Takashi Shimokawabe (Tokyo Institute of Technology)	NA	Tokyo Tech
*A huge and high resolution numerical simulation of urban air flow in Tokyo using lattice Boltzmann method	Manabu Kanda (Tokyo Institute of Technology)	NA	Tokyo Tech
*Application of GPGPU to Seismic Hazard Assessment	Shin Aoi (National Research Institute for Earth Science and Disaster Prevention)	NA	Tokyo Tech
*Algorithm Development Towards Next-Generation Petascale CFD	Daisuke Sasaki (Kanazawa Institute of Technology)	NA, IS	Tohoku, Nagoya, Kyushu
*Computational Science of Multi-Degree-of-Freedom Complex Turbulent Flow Phenomena	Takashi Ishihara (Nagoya University)	NA	Nagoya
*Study of large scale semiconductor device simulation for the next generation power devices	Kiyoshi Ishikawa (Semiconductor Technology Academic Research Center)	NA	Osaka
*Interaction between a huge number of micro particles with internal degrees of freedom and turbulent mixing	Toshiyuki Gotoh (Nagoya Institute of Technology)	NA	Nagoya
*Collaborative HPC study of the coarse-grained molecular dynamics simulation of filler filled polymeric materials	Hiroshi Morita (National Institute of Advanced Industrial Science and Technology)	NA	Hokkaido, UTokyo, Tokyo Tech, Nagoya, Osaka
*Development of Massively Parallel Program, OpenFMO, for Fragment Molecular Orbital method on Multi-platform	Toshio Watanabe (Tokyo Institute of Technology)	NA	Tokyo Tech, Kyoto, Kyushu
*Development of numerical optimization tool for polycrystalline metallic microstructure control by using multi-phase-field method	Akinori Yamanaka (Tokyo University of Agriculture and Technology)	NA	Tokyo Tech
*Theoretical elucidation on highly-sophisticated catalytic mechanisms in the assimilatory nitrate reductase	Mitsuo Shoji (University of Tsukuba)	NA	UTokyo
*Large-scale Particle Simulations using Dynamic Load Balance on a GPU Supercomputer	Takayuki Aoki (Tokyo Institute of Technology)	NA	Tokyo Tech
*Towards innovative simulation technologies in mechanical engineering	Hiroyuki Takizawa (Tohoku University)	NA	Tohoku
*Development of Next Generation Accretion Disk Simulator	Ryoji Matsumoto (Chiba University)	NA	UTokyo
*Development of a relativistic hydrodynamics code and its application to very high energy gamma-ray binaries	Atsuo Okazaki (Hokkai-Gakuen University)	NA	Hokkaido
*Simulations of Ocean and Atmosphere in the Pan-Okhotsk region	Tomohiro Nakamura (Hokkaido University)	NA	Hokkaido

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Project Title	Leader (Affiliation)	Category	Joint Research Center
*Transient Fluid Analysis using Integer Lattice Boltzmann Method for Application of Direct Numerical Simulations	Tadashi Watanabe (University of Fukui)	NA	Tohoku
Ultra-large-scale massively parallel electronic state calculations based on collaboration between physics, mathematics and HPC	Takeo Hoshi (Tottori University)	NA	UTokyo
Large-scale simulations of solar magnetic activities	Takaaki Yokoyama (The University of Tokyo)	NA	UTokyo
Realistic tsunami analysis from seismic center to urban area using hierarchical domain decomposition numerical framework	Kohei Murotani (The University of Tokyo)	NA	Nagoya
Verifying effectiveness of packet pacing on large-scale parallel programs by simulation	Hidetomo Shibamura (Institute of Systems, Information Technologies and Nanotechnologies)	IS	Kyushu
Large-scale Fluid Simulation and Visualization for Disaster Prevention and Environment	Kazuo Kashiyama (Chuo University)	NA	Kyoto
A Large Scale Parallel Numerical Simulation of Fluid-Acoustics for a Wind Instrument with a Bent Tube	Taizo Kobayashi (Kyushu University)	NA	Hokkaido, Kyushu
Building Large-Scale Distributed Design Exploration Framework by Collaborating Supercomputers and Inter-Cloud Systems	Masaharu Munetomo (Hokkaido University)	IS	Hokkaido, Tohoku, Osaka, Kyushu
A Framework for Jointing Computation Center with User-Level Management System	Hideyuki Jitsumoto (The University of Tokyo)	NA, IS	Hokkaido, UTokyo, Tokyo Tech, Kyushu
Refinement of Parallel Efficiency and 3D Visualization for Computational Fluid Dynamics of Polymer Melt	Takahiro Murashima (Tohoku University)	NA	Tohoku
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
Demonstrative study of commoditization of high-end Virtual Reality system	Katsumi Hagita (National Defense Academy of JAPAN)	NA	Tohoku, Nagoya, Osaka
A study on fast migration scheme for network service environment based on multiple virtualization technique	Hiroshi Morita (National Institute of Advanced Industrial Science and Technology)	NW	UTokyo

Toshio Watanabe
(Tokyo Institute of Technology)