List of Supervisors and Research Fields

As of April 1, 2022

Doctoral Course

Department of Mathematics, Graduate School of Science

Fields	Supervisors		Keywords	Remarks
Algebra	Professor	ASAKURA Masanori	Arithmetic geometry	
	Professor	SAITO Mutsumi	Algebraic analysis, rings of differential operators	
	Professor	MATSUMOTO Keiji	Special functions	
	Professor	YASUDA Seidai	Number theory, arithmetic geometry	
	Specially Appointed Professor	YAMASHITA Hiroshi	Representation theory	
	Associate Professor	ATOBE Hiraku	Theory of automorphic representation	
	Associate Professor	SHIBUKAWA Youichi	Yang-Baxter equations and quantum groups	
	Associate Professor	MATSUSHITA Daisuke	Algebraic geometry	
Geometry	Professor	AKITA Toshiyuki	Algebraic topology, group cohomology, discrete groups	
	Professor	ISHIKAWA Goo	Real algebraic geometry, singularity theory	
	Professor	IWASAKI Katsunori	Complex geometry, dynamical systems, Painlevé systems	
	Professor	FURUHATA Hitoshi	Differential geometry	
	Associate Professor	KASUYA Naohiko	Differential topology, contact structures, complex structures	
	Associate Professor	KOBAYASHI Shimpei	Differential geometry	
Analysis	Professor	KUBO Hideo	Partial Differential Equations associated with Nonlinear Dynamics	
	Professor	HORA Akihito	Functional analysis, probability theory	
	Professor	HONDA Naofumi	Algebraic analysis	
	Professor	MIYAO Tadahiro	Mathematical physics, functional analysis, condensed matter physics	
	Associate Professor	KOBAYASHI Masaharu	Harmonic Analysis	
	Associate Professor	SUZUKI Yuhei	Operator algebras	
	Associate Professor	HASEBE Takahiro	Probability theory, complex analysis, functional analysis	
	Associate Professor	HAMAMUKI Nao	Nonlinear partial differential equations, Theory of viscosity solutions	
Applied Mathmatics	Professor	EI Shin-Ichiro	Nonlinear analysis, nonlinear partial differential equations	
	Professor	SAKAI Akira	Probability theory, statistical mechanics, mathematical physics	
	Professor	NAGAYAMA Masaharu	Reaction-diffusion systems, mathematical modeling, numerical simulation	
	Professor	NAMIKI Takao	Ergodic theory, dynamical systems, complex systems	
	Specially Appointed Professor	JIMBO Shuichi	Applied analysis, Partial differential equations, Spectral theory	
	Associate Professor	KURODA Hirotoshi	Partial differential equations, variational analysis	
	Associate Professor	KOBAYASHI Yasuaki	Nonlinear dynamics	
	Associate Professor	SATO Yuzuru	Complex systems, chaotic dynamical systems	
	Associate Professor	TASAKI Sohei	Mathematical life sciences, Microbiology	
	Associate Professor	TABATA Koji	Online learning,data science,theory of computation	
	Associate Professor	MATSUMOTO Kenji	Biophysical complex systems, chaotic dynamical systems	

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As of April 1, 2022

Doctoral Course

Department of Condensed Matter Physics, Graduate School of Science

Laboratories	Supervisors		Keywords	Remarks
Electronic Properties of Solids	Professor	ODA Migaku	High-temperature cuprate superconductors, Frustrated spin systems, Surface & nano-structure magnetism, Material research, Scanning tunneling microscopy/spectroscopy (STM/STS), Spin-polarized STM	
	Specially Appointed Associate Professor	MATSUYAMA Hideo		
	Associate Professor	YOSHIDA Hiroyuki		
J-Material: Physics of Strongly Correlated Systems	Professor	AMITSUKA Hiroshi	J-material, superconductivity, Magnetism, Heavy fermion, Quantum phase transition, Magnetoelectric effects, Very low temperatures, High magnetic fields, High pressure, Ultrasonic measurements, MuSR, Neutron scattering, RXS, Ferroelectrics, Multiferroics, Electronic ferroelectricity, Phase transition, Photoinduced cooperative phenomena	
	Associate Professor	TAKESADA Masaki		
	Associate Professor	YANAGISAWA Tatsuya		
	Assistant Professor	HIDAKA Hiroyuki		
Electronic Properties of Low-demensional Material	Professor	KAWAMOTO Atsushi	NMR, Strongly-correlated electrom systems, Superconductivity, Magnetism Low-dimensional organic conductors, Scanning tunneling microscopy (STM), Scanning tunneling spectroscopy (STS), Nonlinear conductivity, Symmetry of Cooper pairs, Spin density waves (SDWs), Chiral superconductivity, Mesoscopic systems, Topological phenomena	
	Associate Professor	MATSUNAGA Noriaki		
	Lecturer	IHARA Yoshihiko		
	Assistant Professor	NOBUKANE Hiroyoshi		
	Assistant Professor	FUKUOKA Syuhei		
Condensed Matter Dynamics	Professor	NOZAKI Ryusuke	Microscopic dynamics of condensed matters, Dielectric and optical spectroscopy from 1microHz to 10 PHz, Raman scattering, Femtosecond pump-probe spectroscopy, Terahertz time-domain spectroscopy, Solids, Complex liquids, Hydrogen-bonding systems, Semiconductors, Nonlinear optical phenomena, Biological materials	
	Associate Professor	MISHINA Tomobumi		
	Assistant Professor	YAMAMOTO Sekika		
Statistical Physics	Professor	NEMOTO Koji	Statistical physics, Non-equilibrium, Non-linearity, Random systems, Complex networks, Phase transition, Self-organization, Critical phenomena, Scale-free structures, Numerical simulation, Superconductivity, Superfluidity, Bose-Einstein condensation, Condensed matter physics, Magnetism, Multiferroics, Heavy fermion	
	Professor	KITA Takafumi		
	Assistant Professor	OKUDA Koji		
Mathematical Physics	Professor	YAMAMOTO Shoji	Making full use of various—both analytical and numerical—quantum statistical methods, we explore novel quantum cooperative phenomena in strongly correlated electron systems. A recent keyword is "topology". Interpretation of phenomena must be our ultimate goal, but we often take further interest in the mathematical and methodological ways we can accomplish this. We construct microscopic theories on a variety of physics such as quantum spin liquid, photoinduced magnetism, nuclear magnetic resonance, inelastic neutron scattering, Raman scattering, optical conductivity, and angle-resolved photoemission spectroscopy. We sometimes enjoy theoretical formulation in itself and sometimes interpret observations in cooperation with experimentalists and chemist.	
	Lecturer	OHARA Jun		

Laboratories	Supervisors		Keywords	Remarks
Nanostructure Physics (RIES)	Professor	ISHIBASHI Akira	Nano-structured devices, New photovoltaic devices, Next-generation solar cells, Clean unit system platforms	
	Associate Professor	KONDO Kenji	Qunatum field theory, Many-body perturbation theory, Spintronics devices, Magnetism, Electronic correlations, Dirac electron, Topological insulator	
Condensed Matter Theory Field of Advanced Functional Materials and Physics (NIMS).	Visiting Professor	YAMASE Hiroyuki	Quantum many-body theory, Superconductivity, Magnetism, Critical phenomena, Electronic nematic liquids	
Nano-system Photonics Field of Advanced Functional Materials and Physics (NIMS)	Visiting Professor	NAGAO Tadaaki	Surface physics, Nanophotonics, Energy conversion, Nanomaterials	
Solid State of Physics in High Magnetic Fields Field of Advanced Functional Materials and Physics (NIMS)	Visiting Professor	IMANAKA Yasutaka	Magneto-Spectroscopy, High magnetic field, Terahertz wave, Cyclotron resonance, Quantum Hall effect, Dirac Fermion, Topological insulator	
Surface Quantum Phase Materials Field of Advanced Functional Materials and Physics (NIMS)	Visiting Professor	UCHIHASHI Takashi	Surface and interface, Atomic layer, Two-dimensional, Quantum materials, Superconductivity, Topological state, Ultrahigh vacuum, Nanotechnology, Scanning tunneling microscopy, Electron transport	
Muon Spin Resonance Laboratory Field of Spin Resonance Material Science (RIKEN)	Visiting Professor	WATANABE Isao	μSR material science at the RIKEN-RAL Muon Facility in the UK. Experimental and theoretical studies on the magnestism, superconductivity, industiral applications, non-distructive element analysis, muon hyperfine interactions in metals, insuators and organic molecules. Muon site and magnetic spin structural analysis by the density functional theory.	
Electron Spin Resonance Laboratory Field of Spin Resonance Material Science (RIKEN)	Visiting Associate Professor	OSHIMA Yugo	Electron Spin Resonance (ESR) from X-band to millimeter and sub-millimeter waves, High magnetic field, Strongly-correlated materials, Molecular magnets, Molecular conductors, Spin-Liquid system, Nano-carbon materials.	

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As of April 1, 2022

Doctoral Course

Department of Cosmosciences, Graduate School of Science

Laboratories	Supervisors		Keywords	Remarks
Observational Astronomy	Professor	SORAI Kazuo	Observational astronomy, extragalacitc astronomy, interstellar matter, development of observational instruments and system for the Antarctic THz telescope	
	Assistant Professor	SALAK Dragan		Institute for the Advancement of Higher Education
Theoretical Particle Physics and Cosmology	Professor	SUZUKI Hisao	Particle physics, beyond the standard model, dark matter, dark energy, grand unified theory, superstrings, supersymmetry, early universe	
	Professor	KOBAYASHI Tatsuo		
	Associate Professor	SETO Osamu		
	Lecturer	SUEHIRO Kazuhiko		
	Assistant Professor	DAS Arindam		Institute for the Advancement of Higher Education
Theoretical Nuclear Physics	Professor	KIMURA Masaaki	Quantum many-body problems, nuclear force, unstable nuclei, nucleosynthesis, hadronic matter	Will move in March, 2023.
	Associate Professor			Applicants must contact Professor Kimura in advance.
Theoretical Astrophysics	Professor	OKAMOTO Takashi	Theoretical astronomy, numerical simulations, galaxy formation, galaxy clusters, supermassive black holes, interstellar matter, star formation, interstellar dust	
Planetary and Space Group	Professor	KURAMOTO Kiyoshi	Origin and evolution of planets and satellites, material evolution during planetary system formation, structure and dynamics of Earth and planetary atmospheres, comparative planetology, space exploration and ground-based observation, experimental studies, theory and hierarchical numerical simulation models, applications of information technology	
	Professor	TAKAHASHI Yukihiro		
	Professor	ISHIWATARI Masaki		
	Professor	SATO Mitsuteru		
	Associate Professor	KAMATA Shunichi		
	Specially Appointed Associate Professor	KUBOTA Hisayuki		
	Lecturer	TAKAGI Seiko		

Laboratories	Supervisors		Keywords	Remarks
Astrophysical Chemistry / Ice and Planetary Science	Professor	WATANABE Naoki	Interstellar molecules, ice dust, amorphous solid water, surface reactions	
	Associate Professor	KIMURA Yuki		
	Associate Professor	OBA Yasuhiro		
	Assistant Professor	HIDAKA Hiroshi		
	Assistant Professor	TSUGE Masashi		
Phase Transition Dynamics	Professor	SAZAKI Gen	Phase transition dynamics, crystal growth, ice, snow, interferometry, advanced optical microscopy, atomic force microscopy	
	Assistant Professor	NAGASHIMA Ken		
	Assistant Professor	MURATA Ken-ichiro		
Information Media Science	Professor	FUSE Izumi	Learning science, learning platforms, open education	
	Assistant Professor	YAMAMOTO Yuichi		
Nuclear Reaction Data Science	Associate Professor	HIRABAYASHI Yoshiharu	Nuclear data, nuclear reactions, evaluation	Information Initiative Center
	Visiting Professor	FUKAHORI Tokio		Inter-field Cooperation with the Japan Atomic Energy Agency (JAEA) in the field of nuclear data.
	Visiting Professor	IWAMOTO Nobuyuki		
Spacecraft Observation Group	Visiting Professor	SATO Takehiko	Planetary exploration, infrared astronomy from space, radio astronomy from space	Inter-field Cooperation with Japan Aerospace Exploration Agency (JAXA) in the field of spacecraft observation.
	Visiting Associate Professor	MURATA Yasuhiro		
	Visiting Associate Professor	YAMAMURA Issei		

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Doctoral Course

Department of Natural History Sciences, Graduate School of Science

As of June 1, 2022

Research Fields	Research Groups & Laboratories	Supervisors		Keywords	Remarks
Earth and Planetary Dynamics	Meteorology	Professor	INATSU Masaru	Meteorology, dynamics and forecast, cyclones and fronts, theory and numerical modelling, development of numerical model, meso-scale phenomena, cloud, rain, snow, aerosol, lightning, material transport, and their application.	
		Associate Professor	SATO Yousuke		
		Specially Appointed Assistant Professor	HONDA Takumi		
	Physical Oceanography and Climate	Professor	MINOBE Shoshiro	Physical oceanography, meteorology, air-sea interactions, climate variability & change, oceans' role in climate, multidisciplinary challenges, numerical modelling, data analysis	
		Associate Professor	SASAKI Yoshinori		
	Space Geodesy	Professor	FURUYA Masato	Space geodesy, GNSS, GPS, INSAR, GRACE, gravity, Earth rotation, atmospheric sensing, crustal deformation, glaciology, planetary geodesy, ionosphere	
		Associate Professor	TAKADA Youichiro		
	Seismology	Specially Appointed Professor	YOMOGIDA Kiyoshi	Seismic wave propagation, Earth structure, seismic tomography, broadband waveform analysis, lateral heterogeneity and anisotropy	
		Associate Professor	YOSHIZAWA Kazunori		

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As of April 1, 2022

Research Fields	Research Groups & Laboratories	Supervisors		Keywords	Remarks
Earth and Planetary System Science	Petrology and Volcanology	Professor	KURITANI Takeshi	Petrological, geochemical, experimental, and theoretical studies for understanding generation, ascent, evolution, and eruption processes of magmas, differentiation processes of the lunar, and evolutionary processes of the Earth.	
		Assistant Professor	YOSHIMURA Shumpei	Experimental and theoretical studies on igenous and volcanic processes	
	Geochemistry	Professor	YURIMOTO Hisayoshi Retirement, March 31st, 2023 (scheduled)	Geochemistry, cosmochemistry, planetary chemistry, galaxies, stars, planetary systems, protoplanetary disks, planets, meteorites, Earth, core, mantle, crust, oceans, atmosphere, life, magma, geofluids, mass spectrometry, spectroscopy, microscopy, dust formation, crystal growth, high pressure, solar system evolution, planetary exploration	
		Associate Professor	KAWASAKI Noriyuki		
		Assistant Professor	BAJO Ken-ichi		
	Earth Materials Science	Professor	NAGAI Takaya	Mineralogy, crystallography, crystal growth, physics and chemistry of minerals	
		Associate Professor	KAWANO Jun		
		Assistant Professor	SHINOZAKI Ayako		
	Paleobiology	Professor	KOBAYASHI Yoshitsugu	Vertebrate evolution, dinosaurs, reptiles, birds, phylogenetic relationships, functional morphology, comparative anatomy, embryology	Hokkaido University Museum
		Associate Professor	IBA Yasuhiro	Evolution of Mesozoic marine biota, paleobiogeographic responses, global environmental change, origin of modern marine biota	

Research Fields	Research Groups & Laboratories	Supervisors		Keywords	Remarks
Earth and Planetary System Science	Earth Bisophere Geoscience	Professor	SAWADA Ken	Paleoenvironmental reconstruction, Organic sedimentology, Molecular paleobiology, Macromolecular biogeochemistry, biomarker paleoclimatology	
		Lecturer	WATANABE Tsuyoshi	High-resolution reconstruction of palaeoenvironments, biogeochemical cycles in reef ecosystems on the geological time scale	
		Assistant Professor	NAKAMURA Hideto	Organic Geochemistry, paleobiochemistry, biomarker proxies for paleodiversity and paleoenvironments, molecular fossils, plant evolution, paleovegetation reconstruction	
	Geotectonics	Associate Professor	KAMEDA Jun	Subduction zone seismogenesis, water-rock interactions, diagenesis, electron microscopy, clay mineralogy	
		Assistant Professor	Marie Python	Petrography and chemistry of the crust and mantle in ophiolites and the Pacific Ocean, mantle melting, magmatic evolution of the oceanic crust, hydrothermal circulation, interactions within the oceanic crust and mantle	

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As of April 1, 2022

Research Fields	Research Groups & Laboratories	Supervisors		Keywords	Remarks
Biodiversity	Biodiversity	Professor	KAJIHARA Hiroshi	Biodiversity I: Marine invertebrates, Nemertea, taxonomy, phylogeny, morphology	
		Lecturer	KAKUI Keiichi	Biodiversity I: Marine invertebrates, Crustacea, Tanaidacea, taxonomy, phylogeny, morphology	
		Professor	KOGAME Kazuhiro	Biodiversity II: Taxonomy, phylogeny, evolution, seaweeds,	
		Lecturer	NAKADA Takashi	Biodiversity II: Taxonomy, phylogeny, evolution, microalgae, Chlorophyceae	
		Assistant Professor	Kevin Wakeman	Biodiversity II: Biodiversity, evolution, protists, Apicomplexa, dinoflagellates	Institute for the Advancement of Higher Education
		Professor	MASUDA Ryuichi	Bidiversity IV (Laboratory of Genetic Diversity): Molecular phylogenetics, population genetics, biogeography, mammals	
		Professor	TAKAGI Masaoki	Biodiversity III: Ecology,evolution,island,bird	

Research Fields	Research Groups & Laboratories	Supervisors		Keywords	Remarks
Biodiversity	Biodiversity	Associate Professor	ABE Tsuyoshi	Biodiversity II: Seaweeds, taxonomy, phylogeny, chemotaxonomy	Hokkaido University Museum
		Associate Professor	KATOH Toru	Biodiversity I: Evolution, phylogeny, populations, insects	

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As of April 1, 2022

Research Fields	Research Groups & Laboratories	Supervisors		Keywords	Remarks
Science Communication	Communication of Science and Technology	Associate Professor	MIKAMI Naoyuki	Sociology, science and technology, public participation, governance and policy, technology assessment	Institute for the Advancement of Higher Education
		Associate Professor	KAWAMOTO Shishin		CoSTEP
	Philosophy of Science and Technology	Professor	MATSUOU Masahiro	Philosophy of science, ethics of science and technology, philosophy of risk, statistical inference of cause	
	Museum Education	Professor	YUASA Makiko	Museum communication, museum education, museum evaluation	The Hokkaido University Museum
	Science Education	Professor	IKEDA Fumihito	Self-efficacy, cognitive bias, creativity, human-computer interactions, higher education, educational technology, open education, instructional design	Institute for the Advancement of Higher Education
		Associate Professor	IWAMA Norikazu		
		Associate Professor	YAMADA Kunimasa		Creative Reserch Institution
		Associate Professor	SHIGETA Katsusuke		Information Initiative Center, Hokkaido University
		Specially Appointed Associate Professor	SUGIURA Mayumi		Institute for the Advancement of Graduate Education

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As of April 1, 2022

Research Fields	Research Groups & Laboratories	Supervisors		Keywords	Remarks
Seismology and Volcanology	Seismological Observation	Professor	TAKAHASHI Hiroaki	Earthquake geophysical observation, seismographs, GNSS, gravity, subduction great earthquakes, inland earthquakes, statistical seismology, land and ocean bottom crustal deformation, regional tectonics in northeastern Asia, geothermal exploration, earthquake disaster mitigation	
		Associate Professor	KATSUMATA Kei		
		Associate Professor	OHZONO Mako		
	Ocean Bottom Seismology and Tsunami	Professor	TANIOKA Yuichiro	Subsurface structure at subduction zones,elastic wave propagation, tectonics of Northern Mid Atlantic Ridge,earthquake source processes, generation and propagation of tsunamis, pre-historical earthquakes and tsunamis, paleo-seismological analysis, international field science, disaster mitigation	
		Associate Professor	MURAI Yoshio		
		Associate Professor	NISHIMURA Yuichi		
		Lecturer	YAMANAKA Yusuke		
	Volcano Physics	Professor	AOYAMA Hiroshi	Volcanology, volcanic seismology, eruption prediction, transport processes, volcano hydrology, crustal deformation, space geodesy, geo-electromagnetism, spectroscopy of volcanic plume, volcano monitoring system	
		Assistant Professor	TANAKA Ryo		
	Subsurface Structure	Professor	HASHIMOTO Takeshi	Subsurface exploration in seismogenic zones and active volcanoes, tectono-electromagnetism, magnetotellurics, geomagnetic field observation, conductivity anomaly	

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