

List of Supervisors and Research Fields

As of September 1, 2023

Master's 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 representations	
	Associate Professor	SHIBUKAWA Youichi	Yang-Baxter equations and quantum groups	
	Associate Professor	MATSUSHITA Daisuke	Algebraic geometry	
	Assistant Professor	SCRIMSHAW, Travis	Crystal basis, Yang-Baxter equation, Schubert calculus	
Geometry	Professor	AKITA Toshiyuki	Algebraic topology, group cohomology, quandle	
	Professor	INOUCHI Junichi	Geometry, integrable systems, Lie group, homogeneous spaces	
	Professor	FURUHATA Hitoshi	Differential geometry	
	Specially Appointed Professor	IWASAKI Katsunori	Complex geometry, dynamical systems, Painlevé systems	
	Associate Professor	KASUYA Naohiko	Differential topology, contact structures, complex structures	
	Associate Professor	KAWASAKI Morimichi	Symplectic geometry, partial quasi-morphism	
	Associate Professor	KOBAYASHI Shimpei	Differential geometry	
	Assistant Professor	KANDA Yutaka	Differential topology	
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	UMETA Yoko	Exact WKB analysis, asymptotic analysis, higher order Painlevé equations, Stokes geometry	
	Associate Professor	KOBAYASHI Masaharu	Harmonic Analysis	
	Associate Professor	SUZUKI Yuhei	Operator algebras	
	Associate Professor	HASEBE Takahiro	Probability theory, functional analysis	
	Associate Professor	HAMAMUKI Nao	Nonlinear partial differential equations, Theory of viscosity solutions	
Applied Mathematics	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	
	Professor	MASAKI Satoshi	Partial differential equations, harmonic analysis, variational analysis	
	Specially Appointed Professor	EI Shin-Ichiro	Nonlinear analysis, nonlinear partial differential equations	
	Specially Appointed Professor	JIMBO Shuichi	Applied analysis, Partial differential equations, Spectral theory	
	Associate Professor	KURODA Hiroto	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	
	Assistant Professor	Yikan Liu	Partial differential equations, inverse problems	

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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	Will retire in March, 2024.
	Professor	YOSHIDA Hiroyuki		
	Specially Appointed Associate Professor	MATSUYAMA Hideo		Will retire in March, 2024.
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	
	Professor	YANAGISAWA Tatsuya		
	Associate Professor	TAKESADA Masaki		
	Assistant Professor	HIDAKA Hiroyuki		
Electronic Properties of Low-dimensional Material	Professor	KAWAMOTO Atsushi	NMR, Strongly-correlated electron 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	Associate Professor	MISHINA Tomobumi	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	
	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		
	Associate Professor	HAYAMI Satoru		
	Assistant Professor	OKUDA Koji		

Laboratories	Professors		Keywords	Remarks
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.	
	Lecturer	OHARA Jun	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.	
Nanostructure Physics (RIES)	Professor	ISHIBASHI Akira	Nano-structured devices, New photovoltaic devices, Next-generation solar cells, Clean unit system platforms	
	Associate Professor	KONDO Kenji	Quantum field theory, Many-body perturbation theory, Spintronics devices, Magnetism, Electronic correlations, Dirac electron, Topological insulator	

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Department of CosmoSciences, Graduate School of Science

Laboratories	Supervisors		Keywords	Remarks
Observational Astronomy	Professor	SORAI Kazuo	Observational astronomy, extragalactic astronomy, interstellar matter, development of observational instruments and system for the Antarctic THz telescope	Institute for the Advancement of Higher Education
	Assistant Professor	SALAK Dragan		
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	Institute for the Advancement of Higher Education
	Professor	KOBAYASHI Tatsuo		
	Associate Professor	SETO Osamu		
	Lecturer	SUEHIRO Kazuhiko		
	Assistant Professor	DAS Arindam		
Theoretical Nuclear Physics	Associate Professor	NOMURA Kosuke	Quantum many-body problems, nuclear force, unstable nuclei, nucleosynthesis, fundamental symmetries, hadronic matter	
Theoretical Astrophysics	Professor	OKAMOTO Takashi	Theoretical astronomy, numerical simulations, galaxy formation, galaxy clusters, supermassive black holes, interstellar matter, star formation, interstellar dust	
	Assistant Professor	SUGIMURA Kazuyuki		
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 Yukihiko		
	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	
	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 the 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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