Grant-in-Aid for Transformative Research Areas (A):
Unveiling, Design, and Development of Asymmetric Quantum Matters

FY2025 Area General Meeting / Results Presentation Meeting at Nagoya Institute of Technology

2026/1/6 (Tues.)

13:00 - 13:10	ONIMARU, Takahiro	Opening
13:10 - 14:25	**Planned research A01**	
	TABATA, Chihiro	Overview of A01 research and neutron scattering study on asymmetric quantum matter
	AMITSUKA, Hiroshi	Current Status of Microscopic Observations of Odd-Parity Augmented Multipoles
	MATSUMURA, Takeshi	Observation of odd-parity multipoles by resonant x-ray scattering
	NAKAO, Hironori	Observation of odd-parity multipoles by resonant x-ray scattering
	IWASA, Kazuaki	Magnetic frustration associated with 1D-rod packing lattice in $NdRuSn_3$
	SEKIYAMA, Akira	Orbital symmetry and hybridization effects in strongly correlated rare-earth-based compounds probed by photoemission and its dichroism
14:25 - 14:55	(Coffee break)	
	Chair: AMITSUKA, Hiroshi	
14:55 - 15:15	YAMASAKI, Yuichi	Development of advanced methods for probing extended magnetic multipoles using soft X-ray absorption and scattering
15:15 - 15:35	KIMURA, Akio	Visualizing Electronic States of Quantum Materials Using Quantum Beam Spectroscopy
15:35 - 15:55	KITOU, Shunsuke	Visualizing the structures and physical origins of asymmetric quantum materials by synchrotron X-ray diffraction
15:55 - 16:15	ISHIKAWA, Hajime	Antibonding-orbital nematic order in a honeycomb superconductor La_2IRu_2
16:15 - 16:40	(Coffee break)	
	Chair: KOBAYASHI, Kaya	
16:40 - 17:05	MATSUI, Fumihiko	Exploring Symmetry Breaking in Electronic States on Crystal Surfaces by Photoemission Momentum Microscopy
17:05 - 17:25	MATSUBARA, Masakazu	Development of detection and visualization techniques for asymmetric quanta and application to artificial asymmetronics
17:25 - 17:45	MATSUNO, Jobu	Experimental Evaluation of the Dzyaloshinskii–Moriya Interaction at Oxide Interfaces by Analyzing Magnetization Reversal under Tilted Magnetic Fields
17:45 - 18:05	AOKI, Dai	Field and pressure induced phenomena in spin-triplet superconductor UTe_2

1/7 (Wed.)

9:00 - 10:05	**Planned research C01**	
	OHARA, Shigeo	Control of Antisymmetric Magnetic Interactions That Induce Chiral Magnetism
	ONIMARU, Takahiro	Anisotropic magnetic order in rare-earth zigzag chain compounds and multipolar order in Pr-based fcc lattice compounds
	KOBAYASHI, Kaya	Symmetry and electronic states of layered materials
	MATSUDA, Tatsuma	Investigation of Fermi Surface and Magnetic Properties of Intermetallic Compounds with Chiral
	SHIMIZU, Yusei	Symmetry breaking in the novel quantum phase of the uranium-based pseudo-kagome compound URhSn
10:05 - 10:30	(Coffee break)	
	Chair: HATTORI, Kazumasa	
10:30 - 10:55	SATO, Toshihiro	Altermagnetic anomalous Hall effect emerging from electronic correlations
10:55 - 11:15	JESCHKE, Harald O.	From 3d to 4f: Understanding materials via magnetic Hamiltonians
11:15 - 11:35	DAIDO Akito	Nonreciprocal superconducting phenomena induced by microscopic asymmetry
11:35 - 13:00	(Group photo & Lunch)	
13:00 - 14:05	**Planned research C02**	
	YOSHIDA, Hiroyuki	Overview of research project C02 and development of novel asymmetric quantum matters
	HAGA, Yoshinori	Crystal structure and electronic states in correlated actinide intermetallic compuonds
	MATSUHIRA, Kazuyuki	Unveiling a novel phase transition and electric-field-induced phenomena in 5d transition-metal compounds

	ISHIWATA, Shintaro	Unusual charge modulations in unconventional-valence platinum oxides
	KOTEGAWA, Hisashi	Development of even-parity multipole magnets
14:20 - 16:20	**Poster Session (Odd No. -> First half 14:20-15:20, Even No. -> latter half 15:20-16:20)**	
	--> Details are shown in the poster program.	
	Chair: IZAWA, Koichi	
16:35 - 16:55	ONOSE, Yoshinori	Novel elastic responses in asymmetric quantum matters
16:55 - 17:15	KANAZAWA, Naoya	Control of topological surface magnetism by chiral ionic gating
17:15 - 17:35	MIZUKAMI, Yuta	Exploration of Novel Thermal Transport Phenomena Induced by Broken Symmetries
17:35 - 17:55	IKEDA, Atsutoshi	Development and evaluation of the vector-strain device
18:30 - 20:30	**Information exchange meeting**	

1/8 (Thur.)

9:00 - 10:05	**Planned research B01**	
	OTSUKI, Junya	Derivation of multipolar interactions in Ce-based materials by dynamical mean-field theory
	HATTORI, Kazumasa	Theoretical analyses on phenomena driven by mirror symmetry breakings
	HAYAMI, Satoru	Theoretical analysis based on multipole representations
	NOMURA, Yusuke	Research on asymmetric quantum materials starting from first-principles calculations
	KORETSUNE, Takashi	Materials exploration using Wannier-based effective models
10:05 - 10:35	(Coffee break)	
	Chair: KOBAYASHI, Tatsuo	
10:35 - 10:55	UCHIDA, Masaki	Superconductivity and magnetism in RuO_2 thin films
10:55 - 11:15	UEDA, Kentaro	Control of topological phases by asymmetry in electronic degrees of freedom
11:15 - 11:35	SHIMURA, Yasuyuki	Developments of Uniaxial Annealing Method and Application for Anisotropic Quantum Critical Material CeRhSn
11:35 - 13:00	(Lunch)	
13:00 - 14:05	**Planned research A02**	
	YANAGISAWA, Tatsuya	Interim Report on Research Project A02: Lattice Instabilities in Pseudo-Kagome Systems Probed by Ultrasonic Measurements
	ARAKI, Shingo	Topological Hall effect in $PrSb_2$
	IZAWA, Koichi	Visualization of the Nonlinear Conductivity Tensor in Asymmetric Quantum Materials
	KIMATA, Motoi	Precise transport experiments by using FIB
	KITTAKA, Shunichiro	Exploring asymmetric quantum phenomena through field-angle-resolved magnetostriction and thermal-expansion measurements
14:05 - 14:35	(Coffee break)	
	Chair: KIMATA, Motoi	
14:35 - 14:55	WATANABE, Shinji	Clarification of odd-parity crystalline electric field and multipoles in qauasicrystal and approximant
14:55 - 15:15	KIRIKOSHI, Akimitsu	Analysis of electrical and optical conductivity using DFT+DMFT method
15:15 - 15:35	ISHIHARA, Kota	Study of impurity effects on asymmetry superconductors by using electron irradiation
15:35 - 15:55	YONEZAWA, Shingo	Observation of altermagnetic domains in MnTe using scanning high-resolution magneto-optical effect measurements
15:55 -	Closing	