Meeting Program

December 15 (Mon.)

10:00 - 10:05	Announcements		
10:05 - 10:15	Ryotaro Arita *Univ. of Tokyo*	有田 亮太郎	Opening remarks

Session 1 Chair: Hiroshi Kontani (*Nagoya Univ.*)

O1: 10:15 - 10:40	Youichi Yanase *Kyoto Univ.*	柳瀬 陽一	Theoretical design of superconducting diode effect by nonequilibrium and dynamical control, electron correlation, and Anderson localization
O2: 10:40 - 11:00	Shintaro Hoshino *Chiba Univ.*	星野 晋太郎	Interdisciplinary theoretical approaches to strongly correlated electron systems
O3: 11:00 - 11:20	Tetsuo Hanaguri *RIKEN*	花栗 哲郎	Ultralow-temperature STM studies on novel superconducting phenomena
O4: 11:20 - 11:40	Dai Aoki *Tohoku Univ.*	青木 大	Spin-triplet superconductivity under extreme conditions in UTe_2
O5: 11:40 - 12:00	Hideki Narita *Nagoya Univ.*	成田 秀樹	Nonreciprocal responses in noncentrosymmetric superconducting multilayers

Lunch Break (12:00 - 13:10)

Session 2 Chair: Takami Tohyama (*Tokyo Univ. of Sci.*)

O6: 13:10 - 13:35	Hiroki Wadati *Univ. of Hyogo*	和達 大樹	Development of X-ray time-resolved measurements and Raman spectroscopy for observing charge and spin dynamics
O7: 13:35 - 13:55	Naoto Tsuji *Univ. of Tokyo*	辻 直人	Anomalous optical and transport response of superconductors with Lifshitz invariant
O8: 13:55 - 14:15	Kyoko Ishizaka *Univ. of Tokyo*	石坂 香子	Ultrafast transmission electron microscopy for visualizing nonequilibrium dynamics in quantum materials
O9: 14:15 - 14:35	Ryo Shimano *Univ. of Tokyo*	島野 亮	Nonlinear terahertz spectroscopy of collective modes in superconductors

Break (14:35 - 14:50)

Session 3 Chair: Youichi Yanase (*Kyoto Univ.*)

O10: 14:50 - 15:15	Kentaro Nomura *Kyushu Univ.*	野村 健太郎	Effective model study of spin-torque effect in compensated ferrimagnetic Weyl semimetals
O11: 15:15 - 15:35	Masatoshi Sato *Kyoto Univ.*	佐藤 昌利	Non-Hermitian topological phenomena in condensed matter physics
O12: 15:35 - 15:55	Takeshi Mizushima *Osaka Univ.*	水島 健	Theory of Andreev and noise spectroscopy in the topological superconductor UTe_2
O13: 15:55 - 16:15	Satoru Nakatsuji *Univ. of Tokyo*	中辻 知	Spintronics of topological antiferromagnets & altermagnets

Break (16:15 - 16:30)

Session 4 Chair: Ryotaro Arita (*Univ. of Tokyo*)

O14: 16:30 - 16:50	Atsushi Tsukazaki *Univ. of Tokyo*	塚崎 敦	Thin films studies on quantum materials
O15: 16:50 - 17:10	Takeshi Kondo *Univ. of Tokyo*	近藤 猛	Fermiology and skyrmions in centrosymmetric magnets: An ARPES perspective
O16: 17:10 - 17:30	Yukitoshi Motome *Univ. of Tokyo*	求 幸年	Magnetic hopfions: Crystallization and dynamics
O17: 17:30 - 17:50	Nic Shannon *OIST*	Nic Shannon	Theory of quantum matter unit, by design

Networking Reception at RIKEN Cafeteria (18:00 - 20:00)

December 16 (Tue.)

Session 5 Chair: Takasada Shibauchi (*Univ. of Tokyo*)

O18: 9:20 - 9:45	Rina Tazai *Kyoto Univ.*	田財 里奈	Superconductivity and non-reciprocal transport in kagome metals AV_3Sb_5
O19: 9:45 - 10:05	Hiroshi Kontani *Nagoya Univ.*	紺谷 浩	Nature and origins of unconventional density waves and superconductivity in kagome metals and bilayer nickelates
O20: 10:05 - 10:25	Takami Tohyama *Tokyo Univ. of Sci.*	遠山 貴巳	Superconductivity in two-dimensional quasicrystals

Break (10:25 - 10:40)

Session 6 Chair: Hiroki Wadati (*Univ. of Hyogo*)

O21: 10:40 - 11:00	Takasada Shibauchi *Univ. of Tokyo*	芝内 孝禎	Charge-spin dichotomy in the kagome metal $CsCr_3Sb_5$
O22: 11:00 - 11:20	Kensuke Kobayashi *Univ. of Tokyo*	小林 研介	Exploring condensed matter physics with diamond NV centers
O23: 11:20 - 11:40	Hidefumi Takahashi *Osaka Univ.*	高橋 英史	Exploration of anomalous metallic states emerged from coupled magnetism and polarity
O24: 11:40 - 12:00	Kenya Ohgushi *Tohoku Univ.*	大串 研也	Exploratory synthesis and characterization of Kitaev spin liquid candidate materials

Lunch Break (12:00 - 13:10)

Poster Session (13:10 – 15:10)

Break (15:10 - 15:20)

Session 7 Chair: Naoto Tsuji (*Univ. of Tokyo*)

O25: 15:20 - 15:45	Terumasa Tadano *NIMS*	只野 央将	*Ab initio* structure optimization at finite temperatures: Code development and application to $La_3Ni_2O_7$
O26: 15:45 - 16:05	Atsushi Togo *NIMS*	東後 篤史	Software development for first-principles electron-phonon interaction calculations using the supercell approach with finite-displacements

O27: 16:05 - 16:25	Kazuhiko Kuroki *Osaka Univ.*	黒木 和彦	Theoretical study on unconventional pairing mechanism in multilayer nickelate superconductors
O28: 16:25 - 16:45	Ryotaro Arita *Univ. of Tokyo*	有田 亮太郎	First-principles calculation of coherence length and magnetic penetration depth based on superconducting density functional theory

Break (16:45 - 16:55)

Closing Session Chair: Kenya Ohgushi (*Tohoku Univ.*)

16:55 - 17:05	Best poster award ceremony		
17:05 - 17:15	Norio Kawakami *RIKEN*	川上 則雄	Comment from advisory board member
17:15 - 17:25	Yoji Koike *Tohoku Univ.*	小池 洋二	Comment from advisory board member
17:25 - 17:30	Ryotaro Arita *Univ. of Tokyo*	有田 亮太郎	Closing remarks

Poster list

P1:	Youichi Yamakawa *Nagoya Univ.*	山川 洋一	Theory of density wave and superconductivity in $CsCr_3Sb_5$
P2:	Seigo Nakazawa *Nagoya Univ.*	中沢 正剛	Origin of switchable quasiparticle-interference chirality in the loop-current order of kagome metals
P3:	Yuma Murata *Nagoya Univ.*	村田 佑真	Mechanism of $4a_0$ stripe charge-density-wave in kagome metal CsV_3Sb_5
P4:	Shinnosuke Tsutsumi *Kyushu Univ.*	堤 慎之介	Fractional Chern insulator induced by scalar spin chirality on a kagome lattice
P5:	Alpin N. Tatan *Univ. of Tokyo*	Alpin N. Tatan	First-principles studies of Fe_3Sn-based magnetic tunnel junctions
P6:	Hikaru Goto *Tokyo Univ. Sci.*	後藤 光	Cavity-induced quantum Hall phases and topological flat bands in a kagome system
P7:	Tomoki Kanda *Univ. of Tokyo*	神田 朋希	Field orientation dependence of the novel magnetic states in CePdAl
P8:	Yuki Sakuma *Tohoku Univ.*	佐久間 優季	Electronic properties of $CaRhO_3$ with zigzag chain structure
P9:	Kouhei Aoki *Osaka Univ.*	青木 航平	Measurement of the dynamic inverse piezoelectric effect in single-crystal tellurium
P10:	Tatsuto. Hatanaka *Univ. of Tokyo*	畑中 樹人	Non-coplanar spin structure in $Co_{1/3}TaS_2$ induced by the biquadratic spin interaction
P11:	Ritsuto Nakamura *Osaka Univ.*	中村 律途	Nonlinear electrical conduction in $EuTe_4$ with a charge-density-wave transition
P12:	Tomonori Nakamura *OIST*	中村 友謙	Anisotropic quasiparticle interference induced by in-plane magnetic fields in the antiferromagnetic phase of $CeTe_3$
P13:	Takemi Kato *OIST*	加藤 剛臣	Field-dependent charge-density wave in a van der Waals antiferromagnet
P14:	Christopher J. Butler *RIKEN*	Christopher J. Butler	Imaging the local density-of-states imprint of RKKY-stabilized skyrmion crystals
P15:	Katsuki Nihongi *RIKEN*	二本木 克旭	Observing the inter-layer correlation between two-dimensional non-coplanar spin textures in $GdRu_2Ge_2$
P16:	Tadashi Machida *RIKEN*	町田 理	Bogoliubov quasiparticle interference in transition metal dichalcogenide superconductors
P17:	Masahiro Naritsuka *RIKEN*	成塚 政裕	Twist-angle dependence of the superconducting gap in $NbSe_2$/graphene heterostructures
P18:	Tsugumi Matsumoto *Kyoto Univ.*	松本 亜巳	Superconducting acoustogalvanic effect in moire superconductors

P19:	Yuto Jita *Chiba Univ.*	治田 優音	Magnonic harmonic generation and its selection rules in antiferromagnets
P20:	Souma Tamai *Chuo Univ.*	玉井 聡真	Theoretical research on the feasibility of laser-induced topological d-Wave Superconductors
P21:	Takeshi Hasebe *Chiba Univ.*	長谷部 建志	Method and stability of controlling the quantum state with wave-shape manipulation of chirped laser pulse
P22:	Amane Takano *Chiba Univ.*	髙野 天音	Floquet theory for circularly-polarized-light driven rotation of multipolar nanoparticles
P23:	Sota Kitamura *Univ. of Tokyo*	北村 想太	Geometric effects in nonlinear phononics
P24:	Hogara Watanabe *Chiba Univ.*	渡辺 朗	Microscopic theory of spin pumping in antiferromagnets
P25:	Taiga Nakamoto *Univ. of Tokyo*	中本 大河	Theoretical study of the one-dimensional extended Hubbard model coupled with an optical cavity
P26:	Soju Furuta *Sci. Tokyo*	古田 爽樹	Reversible reorientation of the helimagnetic *q*-director in a cubic chiral magnet by current polarity
P27:	Reo Fukunaga *Univ. of Hyogo*	福永 怜央	A compact and cost-efficient ferromagnetic resonance measurement system based on a NanoVNA
P28:	Shingo Toyoda *RIKEN*	豊田 新悟	All-optical control of an antiferromagnet via an inverse optical magnetoelectric effect
P29:	Shigetoshi Tomita *Univ. of Hyogo*	冨田 繁寿	Observation of magnetic-field-induced domain control in $EuFe_2As_2$ single crystals using a polarizing microscope.
P30:	Ryota Ono *JAEA*	小野 凌太	Microscopic theory of magnetoelectric coupling and its application to quantum spin supersolid candidate materials
P31:	Kohei Hattori *Univ. of Tokyo*	服部 航平	Dirac charge in antiferromagnetic topological semimetals
P32:	Tomonari Meguro *Kyushu Univ.*	目黒 智成	Nonlinear spin-motive force driven by mixed-quantum geometry in magnetic insulators
P33:	Yuma Hirobe *Kyoto Univ.*	廣部 佑真	Low-temperature scaling laws for the quantum geometric superfluid weight
P34:	Taisei Kitamura *RIKEN*	北村 泰晟	Quantum-geometry-driven exact ferromagnetism in dispersive-band system
P35:	Atsuo Shitade *Osaka Univ.*	下出 敦夫	Intrinsic spin accumulation in the magnetic spin Hall effect
P36:	Jin Matsuda *Univ. of Tokyo*	松田 仁	First-principles study of odd-parity responses driven by conventional antiferromagnetism

P37:	Shinichiro Asai *Univ. of Tokyo*	浅井 晋一郎	Realization of a Two-Dimensional d-Wave Altermagnet in $La_2O_3Mn_2Se_2$
P38:	Koji Kudo *Kyushu Univ.*	工藤 耕司	Repulsive-interaction-driven topological superconductivity in a half-filled Landau level coupled to an *s*-wave superconductor
P39:	Taiki Matsushita *Osaka Univ.*	松下 太樹	Intrinsic spin-Nernst effect in spin-triplet topological superconductors
P40:	Shingo Haruna *Univ. of Hyogo*	春名 信吾	Theoretical study of correlation effects on spin-lattice relaxation in UTe_2
P41:	Ryuji Hakuno *Kyoto Univ.*	白野 龍二	Superconductivity in UTe_2 from local noncentrosymmetricity
P42:	Koki Doi *Univ. of Hyogo*	土井 洸輝	Theoretical proposal from impurity effects for distinguishing pairing symmetry of UTe_2
P43:	Kaito Totsuka *Univ. of Tokyo*	戸塚 海斗	Field-angle-resolved specific heat study of the nodal gap Structure in UTe_2 using a T_c=2 K single crystal
P44:	Akihiro Minamide *Kyoto Univ.*	南出 晃宏	Vortex bound states in multiphase superconductors $CeRh_2As_2$ with sublattice degrees of freedom
P45:	Kazuyuki Matsumoto *Asahikawa Phys. Inst.*	松元 和幸	The double peak structure in the high field specific heat of the heavy fermion compound $CeRu_2Si_2$
P46:	Ryoma Asai *Univ. of Tokyo*	浅井 僚眞	Finite-temperature *ab Initio* structural optimization of the bilayer nickelate superconductor $La_3Ni_2O_7$
P47:	Daisuke Inoue *Nagoya Univ.*	井上 大輔	SDW/CDW fluctuations-mediated pairing mechanism in thin film bilayer nickelate
P48:	Kota Morita *Sophia Univ.*	森田 航太	Strain effects on the electronic state in the bilayer nickelate thin film of $La_{3-x}Pr_xNi_2O_7$
P49:	Yuki Sato *RIKEN*	佐藤 雄貴	Nonreciprocal charge transport in topological insulator/superconductor heterostructures
P50:	Makoto Ichikawa *Kyoto Univ.*	市川 真	Contribution of nonlinear optical responses to superconducting diode effect
P51:	Jun Oike *Kyoto Univ.*	大池 潤	Microscopic theory of the spin magnetic octupole moment in bulk crystals
P52:	Yuta Kakinuma *Saitama Univ.*	柿沼 優汰	Evaluation of electron chirality in atomic limit
P53:	Natsuki Okada *Chiba Univ.*	岡田 夏希	Symmetry-breaking perturbations in the Jahn-Teller-Hubbard model
P54:	Yuki Yamasaki *Chiba Univ.*	山﨑 勇輝	Reconsideration of coherent states for path-integration formalism of Hubbard model

P55:	Hirone Ishida *Saitama Univ.*	石田 洋音	Low-rank quantics tensor train representation of Feynman diagrams for multiorbital electron-phonon models
P56:	Yoichi Sugiyama *Chiba Univ.*	杉山 陽一	Physical properties of Z_4 parafermions in a two-site system
P57:	Ryuta Iwazaki *Tohoku Univ.*	岩﨑 龍太	Analysis of magnetic states in Kitaev candidate materials RuX_3 (X = Cl, Br) using a localized effective model based on first-principles calculation
P58:	Koji Kobayashi *Sophia Univ.*	小林 浩二	Solving inverse problems via automatic differentiation
P59:	Yuta Furusho *Kyushu Univ.*	古庄 優汰	Modeling of Weyl semimetals via automatic differentiation
P60:	Ryotaro Koshoji *Univ. of Tokyo*	小正路 崚太郎	Mathematical crystal chemistry: Mixed integer nonlinear programming for crystal structure prediction
P61:	Takayuki Ishitobi *JAEA*	石飛 尊之	Physical description of crystal