Achievements in FY2022

論文(paper)

計画研究班名	著者名 (authors)	論文標題 (title)	雑誌名 (Journal)	巻 (Vol.)	号 (No.)	掲載ページ (page no. from-to)	出版年月日(Publicaion Date) YYYY/MM/DD	DOI
A01	Y. Namekawa, K. Kashiwa, H. Matsuda, A. Ohnishi, H. Takase	Improving efficiency of the path optimization method for a gauge theory	Phys. Rev. D	107	3	034509	2023/2/22	10.1103/PhysRevD.107.034509
	A. Antoku, K. Kashiwa	Some Aspects of Persistent Homology Analysis on Phase Transition: Examples in an Effective QCD Model with Heavy Quarks	Universe	9	2	82	2023/2/3	10.3390/universe9020082
A02	F. A. Di Bello, E. Dreyer, S. Ganguly, E. Gross, L. Heinrich, M. Kado, N. Katati, J. Shlomi, N. Soybelman	Conditional Generative Modelling of Reconstructed Particles at Collider Experiments					2022/11/11	10.48550/arXiv.2211.06406
	F. A. Di Bello, E. Dreyer, S. Ganguly, E. Gross, L. Heinrich, A. Ivina, M. Kado, N. Katati, L. Santi, J. Shlomi, M. Tusoni	Reconstructing particles in jets using set transformer and hypergraph prediction networks					2022/12/02	10.48550/arXiv.2212.01328
	T. Kishimoto, M. Morinaga, M. Saito, J. Tanaka	Decay-aware neural network for event classification in collider physics					2022/12/17	10.48550/arXiv.2212.08759
	L. Heinrich, S. Ganguly, F. A. Di Bello, M. Kado	Set-Conditional Set Generation for Particle Physics					2022/12	
	W. Jang, K. Terashi, M. Saito, C. W. Bauer, B. Nachman, Y. Iiyama, R. Okubo, R. Sawada	Initial-State Dependent Optimization of Controlled Gate Operations with Quantum Computer	Quantum	6	798		2022/09/08	10.22331/q-2022-09-08-798
	ATLAS Collaboration	Direct constraint on the Higgs–charm coupling from a search for Higgs boson decays into charm quarks with the ATLAS detector	The European Physics Journal C	82	717		2022/08/18	10.1140/epjc/s10052-022-10588-3
	ATLAS Collaboration	Search for long-lived charginos based on a disappearing-track signature using 136 fb-1 of pp collisions at √s = 13 TeV with the ATLAS detector	The European Physics Journal C	82	606		2022/07/11	10.1140/epjc/s10052-022-10489-5
	ATLAS Collaboration	Flavour Tagging Efficiency Parametrisations with Graph Neural Networks					2022/08/15	
	ATLAS Collaboration	Point Cloud Deep Learning Methods for Pion Reconstruction in the ATLAS Experiment					2022/08/25	
	Kiichi Goto, Taikan Suehara, Tamaki Yoshioka, Masakazu Kurata, Hajime Nagahara, Yuta Nakashima, Noriko Takemura, Masako Iwasaki	Development of a vertex finding algorithm using Recurrent Neural Network	Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment	1047		167836	2023/2	10.1016/j.nima.2022.167836
A03	X. Luo, T. Ohtsuki	Universality classes of the Anderson transitions driven by quasiperiodic potential in the three-dimensional Wigner-Dyson symmetry classes	Physical Review B	106	10	104205	2022/9/21	10.1103/PhysRevB.106.104205
	Z. Xiao, K. Kawabata, X. Luo, T. Ohtsuki, R. Shindou	Level statistics of real eigenvalues in non-Hermitian systems	Physical Review Research	4	4	043196	2022/12/19	10.1103/PhysRevResearch.4.043196
	S Sakai, R Arita, T Ohtsuki	Quantum phase transition between hyperuniform density distributions	Physical Review Research	4	3	033241	2022/9/26	10.1103/PhysRevResearch.4.033241
	S. Daimon, K. Tsunekawa, S. Kawakami, T. Kikkawa, R. Ramos, K. Oyanagi, T. Ohtsuki, E. Saitoh	Deciphering quantum fingerprints in electric conductance	Nature Communications	13	1	3160	2022/6/8	10.1038/s41467-022-30767-w
	RuQing G. Xu, Tsuyoshi Okubo, Synge Todo, Masatoshi Imada	Optimized implementation for calculation and fast-update of Pfaffians installed to the open-source fermionic variational solver mVMC	Computer Physics Communications	277	10	108375	2022/04/08	10.1016/j.cpc.2022.108375
	Kota Ido, Kazuyoshi Yoshimi, Takahiro Misawa, Masatoshi Imada	Unconventional dual 1D-2D quantum spin liquid revealed by ab initio studies on organic solids family	NPJ QUANTUM MATERIALS	7	1	48(1-10)	2022/04/21	10.1038/s41535-022-00452-8
	Jean Baptiste Morée, Motoaki Hirayama, Michael Thobias Schmid, Youhei Yamaji, Masatoshi Imada	Ab initio low-energy effective Hamiltonians for the high-temperature superconducting cuprates Bi2Sr2CuO6, Bi2Sr2CaCu2 O8, HgBa2CuO4, and CaCuO2	Physical Review B	106	23	235150(1-22)	2022/12/15	10.1103/PhysRevB.106.235150
	A. Singh, H. Y. Huang, J. D. Xie, J. Okamoto, C. T. Chen, T. Watanabe, A. Fujimori, M. Imada, D. J. Huang	Unconventional exciton evolution from the pseudogap to superconducting phases in cuprates	Nature Communications	13	1	7906(1-9)	2022/12/23	10.1038/s41467-022-35210-8
	H. Arisawa, H. Shim, S. Daimon, T. Kikkawa, Y. Oikawa, S. Takahashi, T. Ono & E. Saitoh	Observation of spin-current striction in a magnet	Nature Communications	13	1	2440	2022/05/11	10.1038/s41467-022-30115-y
	Miyazaki, Y ; Yokouchi, T ; Shibata, K ; Chen, Y ; Arisawa, H ; Mizoguchi, T ; Saitoh, E ; Shiomi, Y	Quantum oscillations from Fermi arc surface states in Cd3As2 submicron wires	Physical Review Research	4	2	L022002	2022/04/05	10.1103/PhysRevResearch.4.L022002
	Lee, WY ; Kang, MS ; Park, NW ; Kim, GS ; Jang, HW ; Saitoh, E ; Lee, SK	Phase and Composition Tunable Out-of-Plane Seebeck Coefficients for MoS2-Based Films	ACS APPLIED ELECTRONIC MATERIALS	4	4	1576-1582	2022/04/26	10.1021/acsaelm.1c01260
	Hioki, T ; Hashimoto, Y ; Saitoh, E	Coherent oscillation between phonons and magnons	COMMUNICATIONS PHYSICS	5	1	115	2022/05/11	10.1038/s42005-022-00888-1
	Chumak, AV ; Kabos, P ; Wu, M ; Abert, C ; Adelmann, C ; Adeyeye, AO ; Akerman, J ; Aliev, FG ; Anane, A ; Awad, A ; Back, CH ; Barman, A ; Bauer, GEW ; Becherer, M ; Beginin, EN ; Bittencourt, VASV ; Blanter, YM ; Bortolotti, P ; Boventer, I ; Bozhko, DA ; Bunyaev, SA ; Carmiggelt, JJ ; Cheenikundil, RR ; Ciubotaru, F ; Cotofana, S ; Csaba, G ; Dobrovolskiy, OV ; Dubs, C ; Elyasi, M ; Fripp, KG ; Fulara, H ; Golovchanskiy, IA ; Gonzalez-Ballestero, C ; Graczyk, P ; Grundler, D ; Gruszecki, P ; Gubbiotti, G ; Guslienko, K ; Haldar, A ; Hamdioui, S ; Hertel, R ; Hillebrands, B ; Hioki, T ; Houshang, A ; Hu, CM ; Huebl, H; Huth, M; Iacocca, E ; Jungfleisch, MB ; Kakazei, GN ; Khitun, A ; Khymyn, R ; Kikkawa, T ; Kläui, M ; Klein, O ; Klos, JW ; Knauer, S ; Koraltan, S ; Kostylev, M ; Krawczyk, M ; Krivorotov, IN ; Kruglyak, VV ; Lachance-Quirion, D ; Ladak, S ; Lebrun, R ; Li, Y ; Lindner, M ; Macedo, R ; Mayr, S ; Melkov, GA ; Mieszczak, S ; Nakamura, Y ; Nembach, HT ; Nikitin, AA ; Nikitov, SA ; Novosad, V ; Otalora, JA ; Otani, Y ; Papp, A ; Pigeau, B ; Pirro, P ; Porod, W ; Porrati, F ; Qin, H ; Rana, B ; Reimann, T ; Riente, F ; Romero-Isart, O ; Ross, A ; Sadovnikov, AV ; Safin, AR ; Saitoh, E ; Schmidt, G ; Schultheiss, H ; Schultheiss, K ; Serga, AA ; Sharma, S ; Shaw, JM ; Suess, D ; Surzhenko, O ; Szulc, K ; Taniguchi, T ; Urbanek, M ; Usami, K ; Ustinov, AB ; van der Sar, T ; van Dijken, S ; Vasyuchka, VI ; Verba, R ; Kusminskiy, SV ; Wang, Q ; Weides, M ; Weiler, M ; Wintz, S ; Wolski, SP ; Zhang, X	Advances in Magnetics Roadmap on Spin-Wave Computing	IEEE TRANSACTIONS ON MAGNETICS	58	6	0800172	2022/06/17	10.1109/TMAG.2022.3149664
	Ieda, J ; Okayasu, S ; Harii, K ; Kobata, M ; Yoshii, K ; Fukuda, T ; Ishida, M ; Saitoh, E	The Damage Analysis for Irradiation Tolerant Spin-Driven Thermoelectric Device Based on Single-Crystalline Y3Fe5O12/Pt Heterostructures	IEEE TRANSACTIONS ON MAGNETICS	58	8	1301106	2022/08/26	10.1109/TMAG.2022.3145888
	Meer, H.; Gomonay, O.; Schmitt, C.; Ramos, R.; Schnitzspan, L.; Kronast, F.; Mawass, M.; Valencia, S.; Saitoh, E.; Sinova, J.; Baldrati, L.; Kläui, M.	Strain-induced shape anisotropy in antiferromagnetic structures	PHYSICAL REVIEW B	106	9	94430	2022/09/01	10.1103/PhysRevB.106.094430
	Tomosato Hioki ; Tomonao Araki ; Kosuke Umemura ; Koujiro Hoshi ; Eiji Saitoh	Real-space observation of standing spin-wave modes in a magnetic disk	APPLIED PHYSICS LETTERS	121	13	132402	2022/09/26	10.1063/5.0098772
	Takashi Kikkawa; Koichi Oyanagi; Tomosato Hioki; Masahiko Ishida; Zhiyong Qiu; Rafael Ramos; Yusuke Hashimoto; Eiji Saitoh	Composition-tunable magnon-polaron anomalies in spin Seebeck effects in epitaxial Bi x Y 3− x Fe 5 O 12 films	PHYSICAL REVIEW MATERIALS	6	10	104402	2022/10/06	10.1103/PhysRevMaterials.6.104402
	Won-Yong Lee; Min-Sung Kang; Jae Won Choi; Si-Hoo Kim; No-Won Park; Gil-Sung Kim; Yun-Ho Kim; Eiji Saitoh; Young-Gui Yoon; Sang-Kwon Lee	Abnormal Seebeck Effect in Vertically Stacked 2D/2D PtSe2/PtSe2 Homostructure	ADVANCED SCIENCE	9	36	2203455	2022/11/10	10.1002/advs.202203455
	Hoshi, Koujiro ; Hioki, Tomosato ; Saitoh, Eiji	Spin motive force induced by parametric excitation	APPLIED PHYSICS LETTERS	121	21	212404	2022/11/21	10.1063/5.0129466
	Hioki, Tomosato and Saitoh, Eiji	Stochastic dynamics of a metal magnon parametron	JOURNAL OF APPLIED PHYSICS	132	20	203901	2022/11/28	10.1063/5.0123221
	Takashi Kikkawa, Eiji Saitoh	Experimental observation of nuclear-spin Seebeck effect	THE JAPAN SOCIETY OF APPLIED PHYSICS	91	12	230403	2022/12/01	10.11470/jsaprev.230403

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Maekawa, Sadamichi ; Kikkawa, Takashi ; Chudo, Hiroyuki ; Ieda, Jun'ichi ; Saitoh, Eiji	Spin and spin current-From fundamentals to recent progress	JOURNAL OF APPLIED PHYSICS	133	2	020902	2023/01/14	10.1063/5.0133335
Oscar Lee, Kei Yamamoto, Maki Umeda, Christoph W Zollitsch, Mehrdad Elyasi, Takashi Kikkawa, Eiji Saitoh, Gerrit EW Bauer, Hidekazu Kurebayashi	Nonlinear Magnon Polaritons	PHYSICAL REVIEW LETTERS	130	4	046703	2023/01/26	10.1103/PhysRevLett.130.046703
Oyanagi Koichi ; Takahashi, Saburo ; Kikkawa,Takashi ; Saitoh, Eiji	Mechanism of paramagnetic spin Seebeck effect	PHYSICAL REVIEW B	107	1	014423	2023/01/27	10.1103/PhysRevB.107.014423
Takashi Kikkawa, Eiji Saitoh	Spin Seebeck effect: Sensitive probe for elementary excitation, spin correlation, transport, magnetic order, and domains in solids	ANNUAL REVIEW OF CONDENSED MATTER PHYSICS	14		124-151	2023/03/10	10.1146/annurev-conmatphys-040721-014957
Hendrik Meer, Stephan Wust, Christin Schmitt, Paul Herrgen, Felix Fuhrmann, Steffen Hirtle, Beatrice Bednarz, Adithya Rajan, Rafael Ramos, Miguel Angel Niño, Michael Foerster, Florian Kronast, Armin Kleibert, Baerbel Rethfeld, Eiji Saitoh, Benjamin Stadtmüller, Martin Aeschlimann, Mathias Kläui	Laser-Induced Creation of Antiferromagnetic 180-Degree Domains in NiO/Pt Bilayers	ADVANCED FUNCTIONAL MATERIALS			2213536	2023/03/18	10.1002/adfm.202213536
E Rongione, O Gueckstock, M Mattern, O Gomonay, H Meer, C Schmitt, R Ramos, T Kikkawa, M Mičica, E Saitoh, J Sinova, H Jaffrès, J Mangeney, STB Goennenwein, S Geprägs, T Kampfrath, M Kläui, M Bargheer, TS Seifert, S Dhillon, R Lebrun	Emission of coherent THz magnons in an antiferromagnetic insulator triggered by ultrafast spin–phonon interactions	NATURE COMMUNICATIONS	14		1818	2023/03/31	10.1038/s41467-023-37509-6
Yuki Nagai and Hiroshi Shinaoka	Sparse Modeling Approach for Quasiclassical Theory of Superconductivity	JOURNAL OF PHYSICAL SOCIETY OF JAPAN	92	3	034703	2023/02/16	10.7566/JPSJ.92.034703
Yuki Nagai, Akinori Tanaka and Akio Tomiya	Self-learning Monte Carlo for non-Abelian gauge theory with dynamical fermions	PHYSICAL REVIEW D	107		054501	2023/03/08	10.1103/PhysRevD.107.054501
Yuki Nagai	Intrinsic vortex pinning in superconducting quasicrystals	PHYSICAL REVIEW B	106	6	064506	2022/08/16	10.1103/PhysRevB.106.064506
A04 Kushiro Shodai、Yoshida Kentaroh	Chaotic string motion in a near pp-wave limit	Journal of High Energy Physics	2023	1	65	2023	10.1007/JHEP01(2023)065
Fukushima Osamu、Yoshida Kentaroh	Chaotic instability in the BFSS matrix model	Journal of High Energy Physics	2022	9	39	2022	10.1007/JHEP09(2022)039
Hashimoto Koji、Murata Keiju、Tanahashi Norihiro、Watanabe Ryota	Bound on energy dependence of chaos	Physical Review D	106	12	126010	2022	10.1103/physrevd.106.126010
Hashimoto Koji、Ohashi Keisuke、Sumimoto Takayuki	Deriving the dilaton potential in improved holographic QCD from the meson spectrum	Physical Review D	105	10	106008	2022	10.1103/PhysRevD.105.106008
Hashimoto Koji、Matsuo Yoshinori、Yoda Takuya	Transient chaos analysis of string scattering	Journal of High Energy Physics	2022	11	147	2022	10.1007/JHEP11(2022)147
Anatoly Dymarsky, Ashish Kakkar, Kirill Pavlenko, Sotaro Sugishita	Spectrum of quantum KdV hierarchy in the semiclassical limit	JHEP	2022	9	169	2022	10.1007/JHEP09(2022)169
Temma Hanyuda, Soichiro Mori, Sotaro Sugishita	Target space entanglement in quantum mechanics of fermions at finite temperature	JHEP	2022	9	152	2022	10.1007/JHEP09(2022)152
Sotaro Sugishita,Seiji Terashima	Rindler Bulk Reconstruction and Subregion Duality in AdS/CFT	JHEP	2022	11	41	2022	10.1007/JHEP11(2022)041

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B01	Nagai, Yuki and Tanaka, Akinori and Tomiya, Akio	Self-learning Monte Carlo for non-Abelian gauge theory with dynamical fermions	Physical Review D	107		054501-1 ~ 054501-16	2023	10.1103/PhysRevD.107.054501
	Watanabe, Kaito and Sakamoto, Kotaro and Karakida, Ryo and Sonoda, Sho and Amari, Shun-ichi	Deep Learning in Random Neural Fields: Numerical Experiments via Neural Tangent Kernel	Neural Networks	160		148-163	2023	10.1016/j.neunet.2022.12.020
	Ota, Toshihiro and Karakida, Ryo	Attention in a family of Boltzmann machines emerging from modern Hopfield networks	Neural Computation	35		in press	2023	in press
	Karakida, Ryo and Shotaro, Akaho	Learning Curves for Continual Learning in Neural Networks: Self-Knowledge Transfer and Forgetting	International Conference on Learning Representations (ICLR)	なし		1-27	2022	なし
	Yuki Tatsunami, Masato Taki	Sequencer: Deep LSTM for Image Classification	Neural Information Processing Systems (NeurIPS 2022)	なし		1-14	2022	なし
B02	坂田綾香，樺島祥介	ベイズ的グループテストのカットオフ値評価と ROC 解析	統計数理	70			2022	なし
	Ayaka Sakata, Yoshiyuki Kabashima	Decision Theoretic Cutoff and ROC Analysis for Bayesian Optimal Group Testing	IEEE Transaction on Information Theory			to appear	2023	10.1109/TIT.2023.3276696
	Xiangming Meng, Tomoyuki Obuchi, Yoshiyuki Kabashima	On Model Selection Consistency of Lasso for High-Dimensional Ising Models	Proceedings of Machine Learning Research	206		6783-6805	2023	doi.org/10.48550/arXiv.2110.08500 Focus to learn more
	Koki Okajima, Xiangming Meng, Takashi Takahashi, Yoshiyuki Kabashima	Average case analysis of Lasso under ultra sparse conditions	Proceedings of Machine Learning Research	206		11317-11330	2023	doi.org/10.48550/arXiv.2302.13093
	Xiangming Meng, Yoshiyuki Kabashima	Quantized Compressed Sensing with Score-Based Generative Models	Proceedings of ICLR 2023				2023	doi.org/10.48550/arXiv.2211.13006
B03	Hiromichi Nishimura, Toshiaki Fujimori, Tatsuhiro Misumi, Muneto Nitta, Norisuke Sakai	Resurgence and semiclassical expansion in two-dimensional large-N sigma models	JOURNAL OF HIGH ENERGY PHYSICS	2022	6	151	2022/6/27	10.1007/JHEP06(2022)151
	Syo Kamata, Tatsuhiro Misumi, Naohisa Sueishi, and Mithat Ünsal	Exact WKB analysis for SUSY and quantum deformed potentials: Quantum mechanics with Grassmann fields and Wess-Zumino terms	Physical Review D	107	4	045019	2023/02/28	10.1103/PhysRevD.107.045019
	Kohei Kawabata, Ken Shiozaki, Shinsei Ryu	Many-body topology of non-Hermitian systems	Physical Review B	105	16	165137	2022/4/19	10.1103/PhysRevB.105.165137
	Ken Shiozaki	Adiabatic cycles of quantum spin systems	Physical Review B	106	12	125108	2022/9/7	10.1103/PhysRevB.106.125108
	Ken Shiozaki, Masatoshi Sato, Kiyonori Gomi	Atiyah-hirzebruch spectral sequence in band topology: General formalism and topological invariants for 230 space groups	Physical Review B	106	16	165103	2022/10/4	10.1103/PhysRevB.106.165103
	Shuhei Ohyama, Ken Shiozaki, Masatoshi Sato	Generalized Thouless pumps in -dimensional interacting fermionic systems	Physical Review B	106	16	165115	2022/10/17	10.1103/PhysRevB.106.165115

学会等での発表(presentation)

計画研究班名	発表者名(presenter)	発表題目 (title)	学会等名 (organized institute etc)	発表年・月 (YYYY/MM)	会場 (venue)	都市、国 (city, country)	発表種別 (presentation type)
A01	安徳勇知	虚数化学ポテンシャル領域における QCD 有効模型のパーシステ ントホモロジー解析	第128回日本物理学会九州支部例	2022/12	熊本大学	熊本、日本	一般口頭(Oral)
A02	加藤睦代、岩崎昌子、長原 一、吉田道隆、末原大幹、山田 悟、中島悠太、武村紀子、中野貴志	機械学習を用いたスパースサンプリングによるデータ処理技術の基礎開発(II)	日本物理学会2000年秋季大会	2022/09	岡山理科大学	岡山市、日本	一般口頭(Oral)
	岩崎 昌子	加速器制御への機械学習の適用	第19回日本加速器学会年会	2022/10			招待(invited)
	岩崎 昌子	機械学習	Flavor Physics Workshop 2022 (FPWS 2022)	2022/11	ニュー八景園	伊豆の国市、日本	招待(invited)
	加藤 睦代	機械学習を用いたスパースサンプリングによるデータ処理技術の基礎開発	Flavor Physics Workshop 2022 (FPWS 2022)	2022/11	ニュー八景園	伊豆の国市、日本	一般口頭(Oral)
	岩崎 昌子	大型加速器を用いた素粒子実験への機械学習適用	ICEPPセミナー	2022/11	東京大学ICEPP	文京区、日本	一般口頭(Oral)
	岩崎 昌子	Overview of AI application in Accelerator	KEK IINAS 5th International School on Beam Dynamics and Accelerator Technology (ISBA22)	2022/11	ひろしま国際プラザ	東広島市、日本	招待(invited)
	C. Kato, M. Iwasaki, H. Nagahara, M. Yoshida, T. Suehara, S. Yamada, Y. Nakashima, N. Takemura, T. Nakano	R&D of the Data Processing with Sparse Sampling using Machine Learning for High Energy Experiments	ML at HEP workshop	2023/02			ポスター(poster)
	岩崎 昌子	機械学習を適用したKEK電子陽電子入射器ビーム調整のための開発		2023/02			招待(invited)
	度会龍、岩崎昌子、中島悠太、武村紀子、長原一、中野貴志、佐武いつか	GANを用いた加速器シミュレータの開発	日本物理学会2023年春季大会	2023/03			一般口頭(Oral)
	T. Onoe, T. Suehara, K. Kawagoe, T. Yoshioka, Y. Nakajima, H. Nagahara,N. Takemura	Graph Neural Network Jet Flavor Tagging at ILC	ML at HEP workshop	2023/02	KEK	つくば市、日本	ポスター(poster)
	T. Suehara	High-level reconstruction at future e+e- colliders	First ECFA Workshop on e+e- Higgs/EW/Top Factories	2022/10	DESY	Hamburg, Germany	一般口頭(Oral)
	T. Suehara, S. Tsumura, T. Onoe, Y. Nakashima, N. Takemura, H. Nagahara	High-Level Event Reconstruction with Graph Neural Network for Future Colliders	Japanese-Canadian Frontiers of Science Symposium	2023/03	Banff Center for Arts and Creativitiy	Banff, Alberta, Canada	ポスター(poster)
	尾上友紀、末原大幹、吉岡瑞樹、川越清以、中島悠太、長原一、武村紀子	ILCのためのグラフニューラルネットワークを用いたフレーバー識別アルゴリズムの開発	日本物理学会2023年春季大会	2023/03			一般口頭(Oral)
	Hajime Nagahara	Deep sensing - Jointly optimize imaging and processing -	International Workshop on Image Sensors and Imaging Systems	2022/12	静岡大学浜松キャンパス	Shizuoka Japan	招待(invited)
	森永 真央、齊藤真彦、岸本巴、Sanmay Ganguly、田中純一	深層学習を用いたジェットフレーバー分類の研究	日本物理学会2022年秋季大会	2022/09	岡山理科大学	岡山市、日本	一般口頭(Oral)
	Sanmay Ganguly, Junichi Tanaka, Masahiko Saito, Masahiro Morinaga	Generating LHC events through symmetry equivariant networks	日本物理学会2022年秋季大会	2022/09	岡山理科大学	岡山市、日本	一般口頭(Oral)

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	Jian Wu, Sanmay Ganguly, Junichi Tanaka	Photon energy calibration using graph neural networks	日本物理学会2023年春季大会	2023/03			一般口頭(Oral)
	野尻美保子	Anatomy of Jet classification using Deep Learning	The 2nd Asian European Institues (AEI) workshop for BSM	2022/11	The Grand Sumorum, Jeju	Jeju 韓国	招待(invited)
	古市亜門	深層学習によるジェット分類の効率化の理解	日本物理学会2023年春季大会	2023/03	オンライン		一般口頭(Oral)
	野尻美保子	高エネルギー物理は深層学習でどう変わるか	日本物理学会2023年春季大会	2023/03	オンライン		招待(invited)
	野尻美保子	How machine learning changes particle physics	Interdisciplinary Science Conoference in Okinawa	2023/03	OIST	沖縄、日本	招待(invited)
A03	M. Imada	Variational Quantum Monte Carlo and Beyond	QMC in the Next Decade Flatiron Institute Center for Computational Quantum Physics	2022/09	CCQ	New York, USA	招待(invited)
	M. Imada	Variational studies on classical simulation of quantum many-body problem and integrated analyses of spectroscopic experimental data — How can they describe complex real world well ?	Variational Learning for Quantum Matter Bernoulli Workshop	2022/07	EPFL	Lausanne, Switzerland	招待(invited)
	M. Imada	Electron fractionalization and cuprate superconductivity	International Superstripes Conference 2022	2022/06	Frascati National Laboratory	Rome, Italy	招待(invited)
	大槻東巳	固体物理における波動関数の解析と生成	日本物理学会シンポジウム	2023/3/23	online	online	招待(invited)
	大槻東巳	Universality classes of the Anderson transitions driven by quasiperiodic potential in the three-dimensional Wigner-Dyson symmetry classes	日本物理学会	2023/3/22	onlie	online	一般口頭(Oral)
	Tomi Ohtsuki	Universality classes of the Anderson transitions driven by quasiperiodic potential in the three-dimensional Wigner-Dyson symmetry classes	アメリカ物理学会	2023/3/10	APSMM	ラスベガス，米国	一般口頭(Oral)
	大槻東巳	深層学習による波動関数の解析と生成	東京大学AIセンター連続シンポジウム	2022/10/10	online	onlie	招待(invited)
	Tomi Ohtsuki	Unsupervised machine learning the Anderson transitions	Localisation 2022	2022/8/29	Hokkaido Univ.	Sapporo, Japan	ポスター(poster)
	大槻東巳	深層学習で解析・生成したランダム量子系の波動関数〜AIを用いた半導体中の電気伝導の解析〜	RIST HPCI 第6回オンラインサロン「スパコンコロキウム」	2022/7/22	online	online	招待(invited)
	大槻東巳	Critical behaviors of the Anderson transitions in Hermitian and non-Hermitian systems	物性研究所スパコン共同利用・CCMS合同研究会「計算物質科学の新展開」	2022/5/13	online	online	招待(invited)
	S. Daimon	Deciphering Quantum Fingerprints in electronic conductance	Localization 2022	2022/8/27	online	online	招待(invited)
	齊藤英治	Coupling of electron and nuclear spins in spin caloritronics	Spin Caloritronics XI	2022/05/24	University of Illinois	Illinoi, USA	招待(invited)
	齊藤英治	Spin current induced by nuclear spin and quantum spin liquid	2nd international conference on materials for humanity(MH22)	2022/09/21	National University of Singapore	Singapore	招待(invited)
A04	吉田健太郎	Chaotic Instability in the BFSS matrix model	NTU-Kyoto High Energy Physics Workshop/Kawai Fest	2022			招待(invited)
	吉田健太郎	Chaotic Instability in the BFSS matrix model	East Asia Joint Workshop on Fields and Strings 2022	2022			招待(invited)
	Koji Hashimoto	Machine Learning the Bulk in AdS/CFT	Workshop "A Deep learning era of particle theory" at Mainz Institute for Theoretical Physics	2022			招待(invited)
	Koji Hashimoto	Deep Learning and Quantum Gravity	Bethe colloquium at University Bonn	2022			基調(keynote)
	Koji Hashimoto	Machine Learning the Bulk in AdS/CFT	Holography 2022: quantum matter and spacetime	2022			招待(invited)
	Koji Hashimoto	Quantum chaos and black holes	アジア太平洋物理学会	2022			基調(keynote)
	橋本幸士	学習物理学の創成	第16回領域横断物性科学研究会 凝縮系科学の最前線	2022			招待(invited)
	橋本幸士	学習物理学:深層学習と物理学の融合と時空解釈	第12回計算力学シンポジウム	2022			招待(invited)
	Koji Hashimoto	Chaos energy bound	NTU-Kyoto High Energy Physics Workshop/Kawai Fest	2022			招待(invited)
	杉下宗太郎	QEDの赤外発散と漸近対称性	KMI分野横断セミナー「時空の漸近構造、赤外発散、重力波」	2022	名古屋大学		招待(invited)
	Sotaro Sugishita	Rindler Bulk Reconstruction and Subregion Duality in AdS/CFT	Workshop on General Relativity, Cosmology, and Black Hole Information Paradox	2022			一般口頭(Oral)
	杉下宗太郎	Contradiction of Entanglement Wedge Reconstruction in AdS/CFT	YITP Workshop 場の理論と弦理論 2022	2022	京都大学		一般口頭(Oral)
	村田仁樹	ディープラーニングの応用に関する研究	第20回若手研究フォーラム	2022	埼玉工業大学		招待(invited)
	村田仁樹	機械学習の基礎	物理屋のための機械学習講義（第3回）	2023			招待(invited)
計画研究班名	発表者名(presenter)	発表標題 (title)	学会等名 (organized institute etc)	発表年・月 (YYYY/MM)	会場 (venue)	都市、国 (city, country)	発表種別 (presentation type)
B02	Hajime Yoshino	Statistical Mechanics of a Deep Neural Network	Forum de Physique Statistique a l'Ecole Normale Superieure	2022			招待(invited)
	Hajime Yoshino	Spatially Heterogeneous Learning in a Deep Neural Network	Towards a theory of artificial and biological neural networks	2023			招待(invited)
	Hajime Yoshino	Random energy model in a pure ferromagnet	Physics of dense and active disordered materials	2023			招待(invited)
	Angelo Giorgio Cavaliere, Riki Nagasawa, Shuta Yokoi, Tomoyuki Obuchi and Hajime Yoshino	Statistical inference of an assembly of vectors with a large number of components through their p-body products	Physics of dense and active disordered materials	2023			
	Yuki Rea Hamano and Hajime Yoshino	Spatial evolution of RSB in layered p-spin models	Physics of dense and active disordered materials	2023			
	吉野元	深層パーセプトロン学習における熱平衡化	物性研究所スパコン共同利用・CCMS合同研究会「計算物質科学の新展開」	2022			招待(invited)
	吉野元	深層学習の統計力学とガラス的な濡れ転移	非平衡ソフトマター・アモルファス物質の 物性解明への力学的自己組織化からの挑戦	2022			招待(invited)
	吉野元	深層学習における空間的不均一性	京都大学理学研究科 物理学・宇宙物理学専攻 セミナー	2022			招待(invited)
	吉野元	深層ニューラルネットワークにおける隠れた多様体模型の解析	日本物理学会	2022			招待(invited)
	吉野元	深層ニューラルネットワークにおけるレプリカ対称性の破れ	日本物理学会	2022			招待(invited)
	坂田綾香	グループテストにおける確率伝搬法と最適カットオフ	離散数学とその応用研究集会	2022			招待(invited)
	Ayaka Sakata	Decision Theoretic Cutoff and ROC Analysis for Bayesian Optimal Group Testing	Workshop on Functional Inference and Machine Intelligence	2023			招待(invited)
	Yoshiyuki Kabashima	Statistical mechanics approach to linear regression	Workshop on Functional Inference and Machine Intelligence	2023			招待(invited)
	Yoshiyuki Kabashima	Assessing transfer entropy from biochemcal data	Nobel symposium "Predictability in Science in the age of Big Data	2022			招待(invited)
	樺島祥介	拡散モデルに基づく圧縮センシング	公開シンポジウム「データ駆動科学と情報計測の新展開」(DDIMA)	2023			招待(invited)
	Xiangming Meng, Tomoyuki Obuchi, Yoshiyuki Kabashima	On Model Selection Consistency of Lasso for High-Dimensional Ising Models	The 26th International Conference on Artificial Intelligence and Statistics (AISTATS)	2023			

計画研究班名	著者名		title	conference	年	venue info 1	venue	invited
	Koki Okajima, Xiangming Meng, Takashi Takahashi, Yoshiyuki Kabashima		Average case analysis of Lasso under ultra sparse conditions	The 26th International Conference on Artificial Intelligence and Statistics (AISTATS)	2023			
	Xiangming Meng, Yoshiyuki Kabashima		Quantized Compressed Sensing with Score-Based Generative Models	The 26th International Conference on Artificial Intelligence and Statistics (AISTATS)	2023			
B03	三角樹弘		格子フェルミオン再考 -グラフ理論と位相不変量の立場から-	格子上の場の理論と連続空間上の場の理論	2022/7	京大基研	京都，日本	招待(invited)
	Tatsuhiro MISUMI		Resurgence in QFT -renormalon, phase transition and more-	Applicable resurgent asymptotics: Summary meeting(AR2W03)	2022/12/16	ケンブリッジ大学ニュートン研究所	Cambridge,UK	招待(invited)
	Tatsuhiro MISUMI		New insights into lattice fermions and topology	Novel Lattice Fermions and their Suitability for High-Performance Computing and Perturbation Theory	2022/3/6	グーテンベルク大学マインツ	Mainz,Germany	招待(invited)
	Ken Shiozaki		Adiabatic Cycles in Quantum Spin Systems	Geometrical aspects of topological phases of matter: spatial symmetries, fractons and beyond	2022/5/27	Simons center for geometry and physics, Stony Brook University	NY, US	招待(invited)

書籍(book)

計画研究班名	著者名 (author)	著書名 (title)	出版社名 (Publisher)	発行年月 (YYYY/MM)	ISBN	URL
A02	K. Hanagaki, J. Tanaka, M. Tomoto and Y. Yamazaki	Experimental Techniques in Modern High-Energy Physics	Springer	2023/01	978-4-431-56929-9	https://doi.org/10.1007/978-4-431-56931-2

Organized WS

group	Title of event	Host/Co-host	Name of chairperson	代表者所属 (affiliation of chairperson)	開催場所 (venue)	開催都市・国 (city, country)	開催期間 (YYYY/MM/DD- YYYY/MM/DD)	参加者数 (number of participants)	内外国人参加者人数 (number of foreign participants)	英語で発表有なら ENG. (if English, ENG.)
A02	ML at HEP workshop	共催	Yu Nakahama	高エネルギー加速器研究機構(KEK)	高エネルギー加速器研究機構(KEK)	つくば市, 日本	2023/02/23-2023/02/24	120	16	ENG.