

The 2025 Beijing Particle Physics and Cosmology Symposium (BPCS): early Universe, gravitational-wave templates, collider phenomenology

Friday 26 September 2025

Plenary: Cosmological Collider (08:30-10:00)

-Conveners: Jiang-Hao Yu

time	[id] title	presenter
08:30	[31] Anatomy of Family Trees in Cosmological Correlators	Zhong-Zhi Xianyu
09:00	[13] Anatomy of Parity-violating Trispectra in Galaxy Surveys	Prof. Yiming Zhong
09:30	[26] Probing New Physics through the Cosmological Collider	Shuntaro Aoki

Plenary: Dark Matter (10:30-12:00)

-Conveners: zhaofeng kang

time	[id] title	presenter
10:30	[33] Glueball Dark Matter	ZHIWEI 志伟 WANG 王
11:00	[11] Probing Dark Matter with Gravitational-wave Laser Interferometers in Space	Yong Tang
11:30	[14] Testing GUT phase transition via inflated gravitational waves	Ye-Ling Zhou

Plenary: Neutrino (14:00-15:30)

-Conveners: Chengcheng Han

time	[id] title	presenter
14:00	[47] Radiative Corrections for Precision Neutrino Physics	Prof. Shun Zhou
14:30	[6] Neutrino reheating predictions with non-thermal leptogenesis	Xinyi Zhang
15:00	[8] Sub-GeV Sterile Neutrino as a Probe of Neutrino Mass Generation in the Minimal Left-Right Symmetric Model	Sida Lu

Plenary: Early Universe (16:00-18:00)

-Conveners: Ke-Pan (柯盼) Xie (谢)

time	[id] title	presenter
16:00	[22] A Dynamical Quasigluon Description of the Confinement Phase Transition	zhaofeng kang
16:30	[32] New sources of gravitational waves from the early universe	Fa Peng Huang
17:00	[5] Leptogenesis via new spectator process	Wei Chao
17:30	[29] Cosmological Stasis and Its Observational Signatures	Fei Huang

Saturday 27 September 2025

Plenary: Phase Transition (08:00-10:00)

-Conveners: Michael Ramsey-Musolf

time	[id] title	presenter
08:00	[25] Enhancing Phase Transition Calculations with Action Curve Fitting	Prof. Yang Zhang
08:30	[34] First-order phase transitions in the early Universe: gravitational waves, black holes, and feebly-interacting particles	Ryusuke Jinno
09:00	[21] Perturbative cosmological phase transitions in a broad temperature range	Philipp Schicho
09:30	[51] Search for Higgs Boson Pair Production at the ATLAS Experiment	Dr Kun Liu

Plenary: Phase Transition (10:30-12:00)

-Conveners: Fa Peng Huang

time	[id] title	presenter
10:30	[12] Darkogenesis via Supercooled Phase Transition	Yuichiro Nakai
11:00	[18] Long lived Particle searches of Higgs sector	Wei Su
11:30	[17] PBH from EWPT and its GW signal	Yongcheng Wu

Plenary: Effective Field Theory (14:00-15:30)

-Conveners: Zhong-Zhi Xianyu

time	[id] title	presenter
14:00	[2] Effective field theory for general baryon-number-violating nucleon decays	Dr Xiao-Dong Ma
14:30	[23] Operator Basis Construction in Effective Field Theories and Its Applications	Haolin Li
15:00	[27] On-shell Approaches for Gravitational Wave Physics	Mr Fei Teng

Plenary: Phase Transition (16:00-18:00)

-Conveners: Huaikuo Guo

time	[id] title	presenter
16:00	[1] Gauge-Invariant Analysis of Phase Transitions in Dark U(1) Sectors	Prof. Wan-Zhe Feng
16:30	[56] Cosmological Signatures of Neutrino Seesaw Mechanism	Chengcheng Han
17:00	[9] Emulating gravitational wave spectra from sound waves during the cosmological FOPT	Prof. Chi Tian
17:30	[3] Bubble wall velocity from Kadanoff-Baym equations: fluid dynamics and microscopic interactions	Jiang Zhu

Sunday 28 September 2025

Plenary: Collider (08:00-10:00)

-Conveners: Jia Liu

time	[id] title	presenter
08:00	[54] Freeze-in of Composite Dark Sector	Lingfeng Li
08:30	[19] AI enhanced event reconstruction and physics measurements: impact at CEPC Physics reach	manqi ruan
09:00	[28] Reaching the Ultimate Quantum Precision Limit at Colliders: Conditions and Case Studies	xiaoping wang
09:30	[16] Bell Inequality Violation of Light Quarks in Dihadron Pair Production at Lepton Colliders	Bin Yan

Plenary: Collider (10:30-12:00)

-Conveners: manqi ruan

time	[id] title	presenter
10:30	[15] Gravitational-Wave Experiments and Collider Synergies: Unveiling First-Order Phase Transitions	Germano Nardini
11:00	[45] Probing Lepton-Number-Violating New Physics at Colliders	Prof. Gang Li
11:30	[46] Physics Opportunities at the Muon Collider	Dr Yandong Liu

Plenary: Axion/Hadron (14:00-15:30)

-Conveners: Ligong Bian

time	[id] title	presenter
14:00	[37] Searching for axions with gravitational waves	Prof. Huan Yang
14:30	[41] Wess-Zumino-Witten Interactions of Axions with Three-Flavor	Jia Liu
15:00	[40] Probing heavy quarkonium hadronization by energy correlators	Prof. Xiaohui Liu

Plenary: Phase Transition (16:00-18:00)

-Conveners: ZHIWEI 志伟 WANG 王

time	[id] title	presenter
16:00	[39] Hints of an electroweak phase transition and electroweak baryogenesis?	Peter Athron
16:30	[38] Dark Radiation Isocurvature from Cosmological Phase Transitions	Peizhi Du
17:00	[20] Leptogenesis triggered by an electroweak phase transition	Ke-Pan Xie
17:30	[35] Testing Phase Transition and cosmological history at colliders	Wenxing Zhang

Monday 29 September 2025

Plenary: A (08:00-10:00)

-Conveners: Peizhi Du

time	[id] title	presenter
08:00	[48] Numerical simulations on vacuum decay	Prof. Ligong Bian
08:30	[49] The roles of bound state in dark sectors	Prof. Xiaoyong Chu
09:00	[24] Gravitational Waves from Sound Waves	Xiao Wang
09:30	[4] Entanglement features from intermediate heavy particle in scattering	Dr Chon Man Sou

Plenary: Students (10:30-12:10)

-Conveners: Shao-Jiang Wang

time	[id] title	presenter
10:30	[50] Scalar-induced gravitational waves with non-Gaussianity up to all orders	Xiang-Xi Zeng
10:50	[52] Sound waves from primordial black hole formations	Zhuan Ning
11:10	[10] Implications of Topological Field Configurations for Baryon Asymmetry and Dark Matter	Mr Wu Yanda
11:30	[42] Detecting Gravitational Waves from Cosmic Phase Transitions in Space	Qingyuan Liang
11:50	[55] Strong backreaction of gauge quanta produced during inflation and the sourced GWs	Jian-Feng He