

**2nd Workshop on Dense
Matter Equation of State and
Frontiers in Neutron Star
Physics**

Report of Contributions

Contribution ID: 1

Type: **not specified**

A new state of QCD dense matter: long-lived false vacuum

Saturday, 6 June 2026 09:15 (30 minutes)

Presenter: HUANG, Mei (University of Chinese Academy of Sciences)

Contribution ID: 2

Type: **not specified**

QCD phase diagram at high baryon densities

Saturday, 6 June 2026 09:45 (30 minutes)

Presenter: FU, Wei-jie (Dalian University of Technology)

Contribution ID: 3

Type: **not specified**

QCD phase transition at finite magnetic field and density

Saturday, 6 June 2026 10:15 (30 minutes)

Presenter: MAO, Shijun (Xi'an Jiaotong University)

Contribution ID: 4

Type: **not specified**

Constraining symmetry energy from first-principles calculations

Saturday, 6 June 2026 11:15 (30 minutes)

Presenter: HU, Baishan

Contribution ID: 5

Type: **not specified**

Nuclear liquid-gas phase transition and clustering from lattice simulation

Saturday, 6 June 2026 11:45 (30 minutes)

Presenter: REN, Zhengxue (Nankai University)

Contribution ID: 6

Type: **not specified**

Opening

Contribution ID: 7

Type: **not specified**

Linear analysis of neutron stars' universal relations

Saturday, 6 June 2026 13:45 (30 minutes)

Presenter: SHAO, Lijing (Peking University)

Contribution ID: 8

Type: **not specified**

High-Energy Neutrinos and Cosmic Rays from Stellar Collapse and Mergers

Saturday, 6 June 2026 14:15 (30 minutes)

Presenter: GUO, Gang (China University of Geosciences, Wuhan)

Contribution ID: 9

Type: **not specified**

Strong phase transition can relieve major compact-star observation tensions

Saturday, 6 June 2026 14:45 (30 minutes)

Presenter: ZHANG, Chen (Tongji University)

Contribution ID: **10**

Type: **not specified**

Nature of Ultralong Period Radio Transients: Could They Be Strange Dwarf Pulsars?

Presenter: ZHOU, Xia (Xinjiang Astronomical Observatory)

Contribution ID: **11**

Type: **not specified**

Free Discussion

Saturday, 6 June 2026 16:15 (1 hour)

- Jing Ye (Huzhou College), informal slides “Collective Modes and Neutrino Interaction in Hot Nuclear Matter”
- Haoyu Shang (Fudan U), informal slides “Nuclear short range correlations in nuclear matter”

Contribution ID: 12

Type: **not specified**

Nucleosynthesis and Neutrinos in Cosmic Evolution: From BBN to Stellar Explosions

Sunday, 7 June 2026 09:15 (30 minutes)

Presenter: KAJINO, Toshitaka (Beihang University / University of Tokyo / NAOJ)

Contribution ID: 13

Type: **not specified**

The FAST FRB Key Science Project

Sunday, 7 June 2026 09:45 (30 minutes)

Presenter: ZHU, Weiwei (National Astronomical Observatories, CAS)

Contribution ID: 14

Type: **not specified**

Analysis on Neutron Star Matter with a General Quantum Hadrodynamics Model

Sunday, 7 June 2026 10:15 (30 minutes)

Presenter: MA, Yao (Nanjing University)

Contribution ID: 15

Type: **not specified**

Impact of Symmetry Energy Uncertainties and Dark Matter Admixture on Neutron Star Properties in the Relativistic Mean-Field Framework

Sunday, 7 June 2026 11:15 (30 minutes)

Presenter: HOU, Defu (Central China Normal University)

Contribution ID: 16

Type: **not specified**

Probing short range correlation in nuclei using heavy ion collisions

Sunday, 7 June 2026 11:45 (30 minutes)

Presenter: XIAO, Zhigang (Tsinghua University)

Contribution ID: 17

Type: **not specified**

Structure and Oscillations of Neutron Stars

Sunday, 7 June 2026 14:15 (30 minutes)

Presenter: CHEN, Huan (China University of Geosciences)

Contribution ID: **18**

Type: **not specified**

Close-in Pulsar Planets as a Special Probe of Strange Quark Stars

Presenter: HUANG, Yongfeng (Nanjing University)

Contribution ID: 19

Type: **not specified**

Astrophysical neutrinos with JUNO

Presenter: LI, Yufeng (IHEP, Beijing)

Contribution ID: 20

Type: **not specified**

Students' Session A & Free Discussion

Sunday, 7 June 2026 16:15 (1h 15m)

- Shuying Li (Nankai University)

“Influence of Effective Nucleon Mass on Equation of State for Supernova Simulations and Neutron Stars”

- Hongkai Wang (South China University of Technology)

“Constraining Symmetry Energy from Neutron Star Observables via Machine Learning”

- Jiaxin Niu (Yangzhou University)

“Equation of state for dense stellar matter in RMF models with zero and finite temperatures”

- Hao-Song You (T.D. Lee Institute, SJTU)

“U-spin symmetry energy and the hyperon puzzle”

Contribution ID: 21

Type: **not specified**

Progresses of NS Mass-Radius measurements based on X-ray observations

Tuesday, 9 June 2026 10:30 (30 minutes)

Presenter: GE, Mingyu (Institute of High Energy Physics, CAS)

Contribution ID: 22

Type: **not specified**

Measuring neutron star masses and radii from photosphere radius-expansion bursts

Monday, 8 June 2026 10:00 (30 minutes)

Presenter: LIU, Helei (Xinjiang University)

Contribution ID: 23

Type: **not specified**

Neutron Star Maximum Mass and Phase Transition

Monday, 8 June 2026 10:30 (30 minutes)

Presenter: TANG, Shao-Peng (Purple Mountain Observatory)

Contribution ID: 24

Type: **not specified**

Coffee Break

Contribution ID: 25

Type: **not specified**

The energy budget of FRB

Monday, 8 June 2026 11:30 (30 minutes)

Presenter: WANG, Weiyang (University of Chinese Academy of Sciences)

Contribution ID: 26

Type: **not specified**

Superfluid quantum criticality and thermal evolution of neutron stars

Monday, 8 June 2026 12:00 (30 minutes)

Presenter: LIU, Guo-Zhu (University of Science and Technology of China)

Contribution ID: 27

Type: **not specified**

Impact of Precision Mass Measurements and Nuclear Isomers on X-ray Burst Nucleosynthesis

Monday, 8 June 2026 14:00 (30 minutes)

Presenter: LUO, Yudong

Contribution ID: 28

Type: **not specified**

The exotic phases in the compact star

Presenter: HU, Jinniu (Nankai University)

Contribution ID: 29

Type: **not specified**

Inferring the trace anomaly of dense matter from neutron star observations

Monday, 8 June 2026 15:00 (30 minutes)

Presenter: LIN, Lap-Ming (The Chinese University of Hong Kong)

Contribution ID: 30

Type: **not specified**

Improved Nonparametric Model for Neutron Star Equations of State via Deep Neural Networks

Monday, 8 June 2026 16:00 (30 minutes)

Presenter: HUANG, Kaixuan (Nankai University)

Contribution ID: **31**

Type: **not specified**

Free Discussion

Monday, 8 June 2026 16:30 (1 hour)

- Mohammedelnazier Bakhiet (Yangzhou University), informal slides
“Unified Machine-Learning Framework for the Neutron Star Equation of State and Inner Crust with Consistent Thermodynamics and Uncertainty Quantification”
- Wei-Jiang Zou (Guizhou Minzu University), informal slides
“Ab initio Calculations with Relativistic Chiral Forces in Nuclear Physics”

2nd Workshop ... / Report of Contributions

Cancelled

Contribution ID: 32

Type: **not specified**

Cancelled

Contribution ID: 33

Type: **not specified**

Analytical structure of low-energy effective theory

Tuesday, 9 June 2026 09:30 (30 minutes)

Presenter: WEN, Rui (Yantai University)

Contribution ID: 34

Type: **not specified**

Multi-strangeness matter from lattice quantum Monte Carlo calculations

Tuesday, 9 June 2026 10:00 (30 minutes)

Presenter: TONG, Hui (China Institute of Atomic Energy)

Contribution ID: 35

Type: **not specified**

Multi-Messenger Mass–Radius Measurements and Constraints on Ultra-Dense Matter

Tuesday, 9 June 2026 11:30 (30 minutes)

Presenter: LI, Ang (Xiamen University)

Contribution ID: 36

Type: **not specified**

A new approach to resolving the hyperon puzzle in neutron stars

Tuesday, 9 June 2026 12:00 (30 minutes)

Presenter: ZHU, Hao-Fu (University of Science and Technology of China)

Contribution ID: 37

Type: **not specified**

Proton-rich Production of Lanthanides: The vi Process

Monday, 8 June 2026 09:30 (30 minutes)

Presenter: WANG, Xilu (Institute of High Energy Physics, CAS)

Contribution ID: 38

Type: **not specified**

Gravitational Gertsenshtein-Zeldovich mechanism for the Association between GW190425 and FRB 20190425A

Tuesday, 9 June 2026 14:00 (30 minutes)

Presenter: ZHANG, Yun-Long (National Astronomical Observatories, CAS)

Contribution ID: 39

Type: **not specified**

Disentangling neutrino mass ordering using early-time signals from the next galactic supernova

Tuesday, 9 June 2026 14:30 (30 minutes)

Presenter: SARMAH, Prantik (Institute of High Energy Physics, Beijing)

Contribution ID: 40

Type: **not specified**

An overview of neutrino-dense matter interactions in compact stars

Tuesday, 9 June 2026 15:00 (30 minutes)

Presenter: LIN, Zidu (Sun Yat-sen University)

Contribution ID: 41

Type: **not specified**

Students' Session B & Free Discussion

Tuesday, 9 June 2026 16:00 (1h 15m)

- Hao Sun (Yangzhou University)
“The oscillations of neutron stars containing Δ -resonances states”
- Haoyang Qi (Peking University)
“Strangeon dark matter and its detection”
- Junbo Pang (Nankai University)
“Impact of crust-core connection procedures on the tidal deformability of neutron stars”
- Wentong Liu (Xinjiang Astronomical Observatory)
“Distinct Modes of Pulsar Glitch Activity Revealed by the Waiting-Time–Amplitude Morphology”

Contribution ID: 42

Type: **not specified**

QCD phase structure at high baryon density

Wednesday, 10 June 2026 09:30 (30 minutes)

Presenter: GAO, Fei (Beijing Institute of Technology)

Contribution ID: 43

Type: **not specified**

Hadron-quark phase transition in dense matter

Wednesday, 10 June 2026 10:00 (30 minutes)

Presenter: WU, Xuhao (Yanshan University)

Contribution ID: 44

Type: **not specified**

A relativistic mechanism for the enhanced isovector spin-orbit interaction suggested by PREX-II and CREX

Wednesday, 10 June 2026 10:30 (30 minutes)

Presenter: ZHANG, Zhen (Sun Yat-sen University)

Contribution ID: 45

Type: **not specified**

Magnetized Coulomb crystals in white dwarfs and neutron star crusts

Wednesday, 10 June 2026 11:30 (30 minutes)

Presenter: XIA, Cheng-Jun (Yangzhou University)

Contribution ID: 46

Type: **not specified**

Maximum mass of neutron star and relativistic mean field theory

Wednesday, 10 June 2026 12:00 (30 minutes)

Presenter: NAM, Gihwan (Yonsei University)

Contribution ID: 47

Type: **not specified**

Manifestation of scale symmetry in dense nuclear matter and origin of nucleon mass

Sunday, 7 June 2026 13:45 (30 minutes)

Presenter: MA, Yong-Liang (Nanjing University)

Contribution ID: 48

Type: **not specified**

The Non-parametric Equation of State Realizes a Generalized Quark-Hadron Crossover

Wednesday, 10 June 2026 14:00 (30 minutes)

Presenter: HUANG, Yong-Jia (Purple Mountain Observatory/RIKEN)

Contribution ID: 49

Type: **not specified**

Probing Hot Dense Matter with Binary Neutron-Star Merger Simulations

Wednesday, 10 June 2026 14:30 (30 minutes)

Presenter: TU, Zhong-Hao (Xiamen University)

Contribution ID: 50

Type: **not specified**

Free Discussion

Wednesday, 10 June 2026 15:00 (30 minutes)

- Zhiqiang Miao (Tsung-Dao Lee Institute), informal slides “Is the 2.6 M χ Companion in GW190814 a Magnetar?”
- Sophia Han, Zidu Lin, Shuzhe Shi - program summary / concluding remarks

Contribution ID: 51

Type: **not specified**

“Nature of Ultralong Period Radio Transients: Could They Be Strange Dwarf Pulsars?”

Saturday, 6 June 2026 15:45 (30 minutes)

Presenter: ZHOU, Xia (Xinjiang Astronomical Observatory)

Contribution ID: 52

Type: **not specified**

Close-in Pulsar Planets as a Special Probe of Strange Quark Stars

Sunday, 7 June 2026 14:45 (30 minutes)

Presenter: HUANG, Yongfeng (Nanjing University)

Contribution ID: 53

Type: **not specified**

Astrophysical neutrinos with JUNO

Sunday, 7 June 2026 15:45 (30 minutes)

Presenter: JIA, Yi (Institute of High Energy Physics, Beijing)

Contribution ID: 54

Type: **not specified**

The exotic phases in the compact star

Monday, 8 June 2026 14:30 (30 minutes)

Presenter: HU, Jinniu (Nankai University)