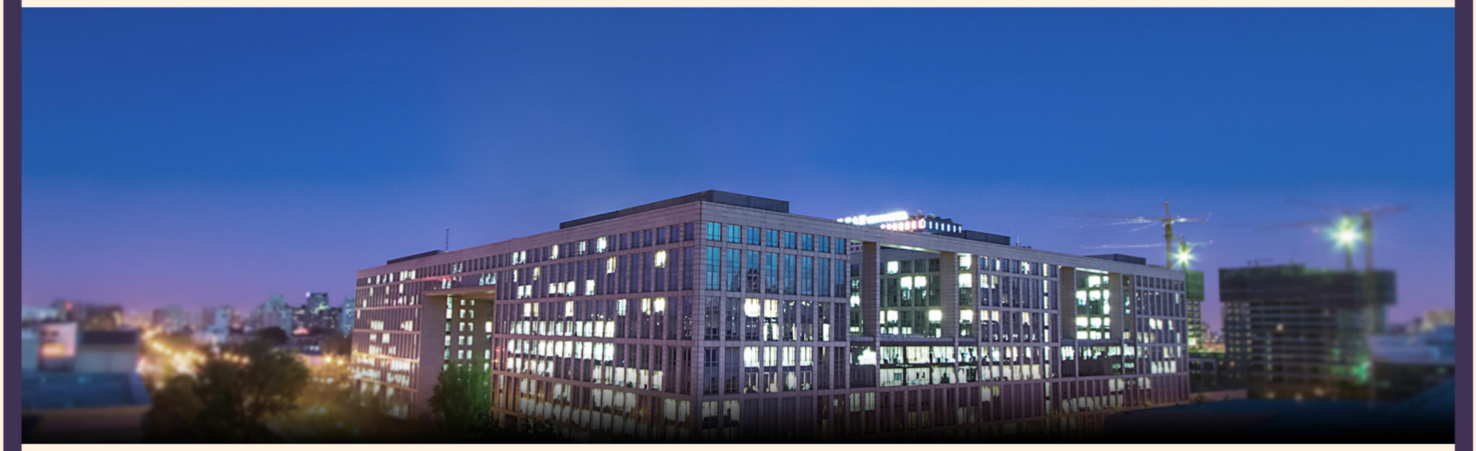
INAC International School & OMEG2024 Pre-Symposium



The INAC International School and Pre-Symposium of the 17th International Symposium on the Origin of Matter and Evolution of Galaxies (OMEG2024) will be held at Beihang University (BUAA) in Beijing, China, from September 2 to 6, 2024, one week before the OMEG2024 symposium in Chengdu, China (17th OMEG conference).

This meeting is organized by the Local Organizing Committee (LOC) from various Chinese institutions and International research centers worldwide. The program consists of a one-day pre-symposium followed by a four-day school, featuring frontier-level research talks and fostering discussions on advanced topics in nuclear and astrophysics.

Offical Website: https://indico.impcas.ac.cn/event/60/

Pre-Symposium of the OMEG 2024

Sep. 2 (Monday)

8:45 – 9:00 **Baohua Sun**
(Dean of School of Physics, BUAA)
Opening Address

Session ① Neutrinos and Weak Interactions in Physics and Astrophysics Chair: Tatsushi Shima

9:00-9:40 **Baha A. Balentekin**
(Online) (University of Wisconsin-Madison)
Entanglement of Neutrinos in Astrophysical Environments

9:40-10:20 **Myung-Ki Cheoun**
(Online) (Soongsil University)
KDAR neutrino and impacts on neutrino-nucleus interaction in the supernova

10:20-10:50 **Xinxu Wang** (Beihang University)
Stellar beta-decay rate of 63Ni and its impact on the s-process nucleosynthesis in massive stars

10:50 – 11:10 **Tea/Coffee Break**

Session ② Symmetry Energy and Neutron Star Chair: Yelei Sun

11:10-11:40 **Hao Huang** (Institute of Modern Physics, Chinese Academy of Sciences)

A New Strong Urca Pair 63Fe-63Mn and its Impact on the Thermal Evolution and Superburst Ignition of Neutron Star

11:40-12:10 **Yong-Beom Choi**
(Pusan National University)

Correlation between alpha-decay half-lives and symmetry energy

12:10-13:30 **Photo & Lunch**

Session ③ Stellar Evolution and Nucleosynthesis

Chair: Kanji Mori

13:30-14:10 **Marco Limongi**
(Osservatorio Astronomico di Roma, INAF)

Evolution, Nucleosythesis and Final Fate of Stars in the Mass Range 7-15 M⊙

14:10-14:40 **Ruizheng Jiang**
(University of Chinese Academy of Sciences)

A Modified Initial Mass Function of the First Stars with Explodability Theory under Different Enrichment Scenarios

14:40-15:10 **Taoyu Jiao** (Institute of Modern Physics, Chinese Academy of Sciences)

Determining the level parameters of the threshold state for 13C(α ,n)16O through Bayesian-refined R-matrix fitting

15:10-15:30 **Tea/Coffee break**

Session ④ Experiments for Nuclear Astrophysics

Chair: Dukjae Jang

15:30-16:10 **Tatsushi Shima** (RCNP, Osaka University)

Experimental studies of fundamental symmetries relevant for evolution of the universe by means of slow neutrons

16:10-16:40 **Yunzhen Li** (Institute of Modern Physics, Chinese Academy of Sciences)

Direct measurement of the carbon-carbon fusion cross section at stellar energies

16:40-17:10 **Yongce Gong** (Great Bay University)

Detecting neutrons with less sensitivity to neutron emission energy and angular distribution: conceptual design of a novel gaseous scintillator neutron detector

18:00 **Dinner**

INAC International School

Sep. 3 (Tuesday)

08:50-09:00 **Introduction to INAC International School**

09:00-10:30 **Lecture 1**

Marco Limongi

(Osservatorio Astronomico di Roma, INAF)

Presupernova Evolution and Nucleosynthesis of Massive Stars

10:30-10:45 **Tea/coffee break** 

10:45-12:15 **Lecture 2**

Xiaodong Tang (Institute of Modern Physics, Chinese Academy of Sciences)

Nuclear Reactions in Stars

12:15-13:00 **Lunch** 

13:00-13:45 **Lecture 3**

Haining Li (National Astronomical Observatories, Chinese Academy of Sciences)

Stellar archaeology with spectroscopic observations (I)

13:45-14:30 **Lecture 4**

Hongliang Yan (National Astronomical Observatories, Chinese Academy of Sciences)

Stellar archaeology with spectroscopic observations (II)

14:30-18:30 **Tutorial & Group Activity I**

Sep. 4 (Wednesday)

09:00-10:30 **Lecture 5**

Jordi José (Departament de Física, Universitat Politècnica de Catalunya)

Type Ia Supernovae, Classical Novae and X-Ray Bursts

10:30-10:45 **Tea/coffee break** 

10:45-12:15 **Lecture 6**

Shuai Zha (Yunnan Observatories, CAS)

Basics and recent progress of supernova theory

12:15-13:00 **Lunch** 

13:00-16:00 **Group Activity II**

16:00-17:00 **Lecture 7**

Tomoya Takiwaki (Online)

(National Astronomical Observatory of Japan)

Solved and unsolved problems in core-collapse supernovae

17:00-18:30 **Group Activity II**

Sep. 5 (Thursday)

09:00-10:30 **Lecture 8**

Jie Meng (Peking University)

DRHBc Mass Tables and Nucleosynthesis

10:30-10:45 **Tea/coffee break**

10:45-12:15 **Lecture 9**

Ang Li (Xiamen University)

EOS of Dense Nuclear Matter and Neutron Stars and Quark Stars

12:15-13:00 **Lunch**

13:00-13:45 **Lecture 10**

Roland Diehl (Max Planck Institute)

How to measure cosmic gamma rays

13:45-17:30 **Group Activity III**

17:30-18:30 **Lecture 11** **Chiaki Kobayashi** (Online)

(University of Hertfordshire)

Galactic Chemical Evolution in the Era of JWST

Sep. 6 (Friday)

09:00-10:30 **Lecture 12**

Tatsushi Shima (RCNP, Osaka University)

Big-Bang cosmology and dark matter

10:30-10:45 **Tea/coffee break**

10:45-12:15 **Lecture 13**

Xilu Wang

(Institute of High Energy of Physics, CAS)

Heavy-element Nucleosynthesis in Supernovae and Neutron Star Mergers

12:15-13:00 **Lunch**

13:00-14:30 **Lecture 14**

Yufeng Li

(Institute of High Energy of Physics, CAS)

Neutrino Physics and astrophysics with JUNO

14:30-14:45 **Tea/coffee break**

14:45-15:30 **Lecture 15**

Roland Diehl (Max Planck Institute)

Learning from cosmic gamma rays

15:30-17:30	Presentation
17:30-18:00	Break & Evaluation
18:00-18:30	Xiaodong Tang Award Ceremony & Closing Remark

Sponsor

The School of Physics,
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INAC

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