

# International Workshop on New Developments in Laboratory Astrophysics

**Date:** January 9-11, 2024  
**Place:** Chikushi Campus, Kyushu University  
**Zoom:** TBA  
**Contact:** Kentaro Sakai (sakai.kentaro@nifs.ac.jp, NIFS)

## Agenda

### Day 1: January 9 (Room D-106)

Session: instability

15:00-15:10 Opening

15:10-15:30 “Numerical Study of Growth of Kelvin-Helmholtz Instability in Collisionless Shock Experiments”  
Akira Mizuta (RIKEN)

15:30-16:00 “Efficient Magnetic Field Amplification by Ion-Weibel Instability with Magnetized Electrons”  
Taiki Jikei (University of Tokyo)

16:00-16:40 Student presentations  
Lucile Fouquet, Shutaro Kurochi

18:00- Social gathering and discussion  
Place: Izakaya Man (居酒屋 万) [MAP](#)

### Day 2: January 10 (Room E-101)

Session: particle acceleration

10:30-11:00 “Cosmic Ray Acceleration in Relativistic Collisionless Shocks”  
Masanori Iwamoto (Kyoto University)

11:00-11:30 “Laser-Driven Collisionless Shock Acceleration in Micron-Scale Spherical Hydrogen Targets”  
Yuji Fukuda (Kansai Institute for Photon Science)

11:30-12:00 “Over 100 MeV Proton Acceleration with Graphene, Picosecond Laser, and Machine Learning”  
Takumi Minami (Osaka University)

Lunch

## Day 2: January 10 (Room E-101)

Session: artificial intelligence

14:00-14:30 “Advancements in Neural Network Techniques for Electric and Magnetic Field Reconstruction: Application to Ion Radiography”  
Chun-Sung Jao (National Cheng Kung University)

14:30-15:30 Student presentations  
Rikimaru Kitamura, Fuka Nikaido, Naoya Tamaki

### Break

16:00-16:30 “Reconstruction of the Magnetic Reconnection Structure by using Physics Informed Neural Networks (PINNs)”  
Shogo Isayama (Kyushu University)

16:30-17:00 “On the Classification of Electron in Plasma Wake Field”  
Naoki Watamura (Osaka University)

17:00-17:30 “TBA”  
Nataniel Saura (Aix-Marseille University)

19:30- Social gathering and discussion  
Place: Hakata Hanamidori (博多華味鳥 博多駅前店離れ) [MAP](#)

## Day 3: January 11 (Room E-101)

Session: shocks in magnetized plasmas

10:30-11:30 “Nonstationarity of a Collisionless Shock (temporary)”  
Shuichi Matsukiyo (Kyushu University) **tutorial**

### Lunch

14:00-14:30 “ECR Plasma Production in the HYPER-I Device”  
Shinji Yoshimura (National Institute for Fusion Science) **tutorial**

### Break

15:00-15:30 “Formation of Magnetized Bow Shocks with High-Power Laser: Dependence of their Shape on Magnetic Field Orientation”  
Shuta Tanaka (Aoyama Gakuin University)

15:30-16:00 “Current Status on the Combined Experiment of Lasers and ECR Plasmas”  
Kentarō Sakai (National Institute for Fusion Science)

16:00-16:25 Discussion

16:25-16:30 Closing

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