

NCKU-TUDa Lecture Series

劉明豪 Ming-Hao Liu

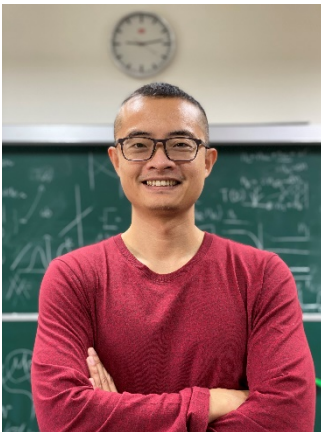
物理系 Department of Physics

minghao.liu@phys.ncku.edu.tw

Co-host Email: z10602003@email.ncku.edu.tw

886 6 2757575 ext 65236

1. Date: November 9th (Tue)
2. Time: 4:00-5:00pm Taiwan Time; 9:00-10:00am Germany Time
3. Topic: Quantum Electronic Transport in Graphene Superlattice Systems
4. Speaker: Ming-Hao Liu, Associate Professor, Department of Physics, National Cheng Kung University



5. Moderator: Tetyana Galatyuk, Professor, Department of Physics, Technische Universität Darmstadt



6. Brief Introduction: Graphene, a single layer of carbon atoms, is the very first 2D material. Its experimental discovery in 2004 revolutionized condensed matter physics and material

science, declaring the advent of the era of 2D materials. This talk addresses transport properties of electrons in graphene, focusing particularly on superlattice systems.

7. Webex Link:

<https://nckucc.webex.com/nckucc/j.php?MTID=m1f36f49cf5cd3b51b0a902a4cccef16e>

黃致憲 Chih-Hsien Huang

電機系 Department of Electrical Engineering

chihhsien_h@mail.ncku.edu.tw

Co-host Email: z10708026@email.ncku.edu.tw

1. Date: November 11th (Thu)
2. Time: 3:30-4:30pm Taiwan Time; 8:30-9:30am Germany Time
3. Topic: Development of Ultrasonic Applications and Transducers
4. Speaker: Chih-Hsien Huang, Assistant Professor, Electrical Engineering Department, National Cheng Kung University



5. Moderator: Andreas Haun, Head of Service Centre, Technische Universität Darmstadt



6. Brief Introduction: Ultrasound systems had been applied to daily life and industry for years. Recently, the progresses on semiconductor and MEMS technology have dramatically improved the computational capability and efficiency of ultrasonic devices.

Various state-of-the-art ultrasonic applications have been investigated. In this talk, the speaker would introduce the latest ultrasonic devices and systems based on his research experience.

7. More Info:

https://www.etit.tu-darmstadt.de/fachbereich/etit_newsdetails_136128.de.jsp

8. Meeting Link: <https://tinyurl.com/ydosjlwy>

戴義欽 Yih-Chin Tai

水利及海洋工程學系 Department of Hydraulic and Ocean Engineering

yctai@mail.ncku.edu.tw

886 6 2757575 ext 63260

1. Date: November 22nd (Mon)
2. Time: 4:30-5:30pm Taiwan Time; 9:30-10:30am Germany Time)
3. Topic: Toward the Integration of Modern Techniques for Sediment-Related Hazard Assessment and for Mitigation against the Causal Disaster
4. Speaker: Yih-Chin Tai, Professor, Department of Hydraulic and Ocean Engineering, National Cheng Kung University



5. Moderator: Hauke Zachert, Professor, Institute of Geotechnics, Technische Universität Darmstadt



6. Brief Introduction:

In this talk, Professor Tai will brief the recently developed techniques for sediment-related hazard assessments, such as landslides, debris flows, which consist of estimating the plausible failure surface/area as well as the flow paths of the released mass. In addition to the theoretical modeling works, a GPU-accelerated simulation tool is introduced for mimicking the subsequent flow paths, where the input and output data are linked to a 3D user-interactive illustration system for investigating various scenarios.

7. Webex Link:

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羅裕龍 Yu-Lung Lo

機械系 Department of Mechanical Engineering

loyl@mail.ncku.edu.tw

Co-host Email: z8508039@email.ncku.edu.tw

1. Date: November 24th (Wed)
2. Time: 3:00-4:00pm Taiwan Time; 8:00-9:00am Germany Time
3. Topic: 3D Metal Printing at NCKU/ME
4. Speaker: Yu-Lung Lo, Distinguished Professor, Mechanical Engineering, National Cheng Kung University



5. Moderator: (TBD)

6. Brief Introduction: A powder bed fusion process in additive manufacturing is introduced in three dimensional finite element heat transfer model to simulate the size of melt pool's cross section for finding the optimal parameters to reduce the porosity and residual stress. In addition, the spatter from the melt pool is simulated by CFD to enhance the quality of the surface roughness in 3D parts. Also, the methodology in measuring the melt pool shape using a high-speed camera is implemented in the system for predicting the porosity of 3D parts based upon machine learning.

7. Webex Link:

<https://nckucc.webex.com/nckucc/j.php?MTID=m8826a8f7d0dcbdde59f3c3987f714fda>

Dr. Chandradeep Singh

電機系 (博士後研究人員)

Department of Electrical Engineering

10912033@gs.ncku.edu.tw

Co-host Email: z10912033@email.ncku.edu.tw

1. Date: November 30th (Tue)
2. Time: 3:30-4:30pm Taiwan Time; 8:30-9:30am Germany Time
3. Topic: Reconfigurable Intelligent Surface Aided Communication
4. Speaker: Chandradeep Singh, Postdoc Fellow, Electrical Engineering Department, National Cheng Kung University



5. Moderator: Marius Pesavento, Professor, Communication Systems Group, Technische Universität Darmstadt



6. Brief Introduction: Millimeter wave (mmWave) communication is required to provide high data rate in next generation wireless networks. Programmable reconfigurable intelligent surface (RIS) provides an energy efficient way to combat severe signal attenuation or even blockage commonly encountered in mmWave communications. In this talk, the speaker introduces about performance analysis and challenges of beam training in RIS aided communication

7. More Info:

https://www.etit.tu-darmstadt.de/fachbereich/etit_newsdetails_136128.de.jsp

8. Meeting Link: <https://tinyurl.com/ydosjlwy>

劉彥辰 Yen-Chen Liu

機械系 Department of Mechanical Engineering

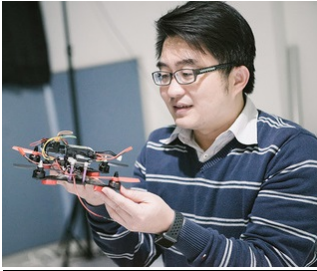
yliu@mail.ncku.edu.tw

Co-host Email: z10108010@email.ncku.edu.tw

1. Date: December 6th
2. Time: 3:00-4:00pm Taiwan Time; 8:00-9:00am Germany Time)
3. Topic: Adaptive Backstepping and Learning Approach for Tracking Control of Aerial

Robotics

4. Speaker: Yen-Chen Liu, Associate Professor, Department of Mechanical Engineering, National Cheng Kung University



5. Moderator: (TBD)

6. Brief Introduction:

This talk focuses on introducing the advanced control techniques for quadrotor tracking and aerial manipulation by utilizing adaptive backstepping controllers and Deep Deterministic Policy Gradient. With the consideration of Euler-Lagrange model, numerical examples and experimental results are illustrated to show the efficiency of the proposed approaches.

7. Webex Link:

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Tetyana Galatyuk

Department of Physics, TUDa

tgalatyuk@ikp.tu-darmstadt.de

https://www.ikp.tu-darmstadt.de/mitarbeiter_ikp/mitarbeiter_details_26304.de.jsp

NOTE: Co-host Prof Yang Email: z10308058@email.ncku.edu.tw

1. Date: December 13th (Mon)
2. Time: 3:00-4:00pm Taiwan Time; 8:00-9:00am Germany Time
3. Topic: Universe in Laboratory
4. Speaker: Tetyana Galatyuk, Professor, Department of Physics, Technische Universität Darmstadt



5. Moderator: Yi Yang, Associate Professor, Department of Physics, National Cheng Kung

University



6. Brief Introduction:

One of the great challenges in modern physics is to understand the evolution of our Universe from the Big Bang to the state we observe today. Of particular interest is to unravel the microscopic properties of the two extreme states of strong-interaction matter that existed, on the one hand, almost 14 billion years ago in the early Universe and, on the other hand, is created when two neutron star merge as recently observed for the first time. The possibility to form and explore in the laboratory strong-interaction matter under conditions similar to those realized a few microseconds after the “Big Bang”, or to those in the interior of compact stellar objects, is truly fascinating. The physics of those extreme states of matter is of pivotal significance for understanding a fundamental aspect of nature.

7. Webex Link:

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楊毅 Yi Yang

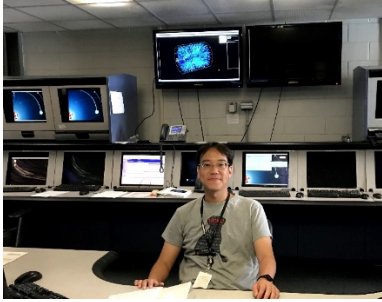
物理系 Department of Physics

yyang@ncku.edu.tw

Co-host Email: z10308058@email.ncku.edu.tw

886 6 2757575 ext 65237

1. Date: December 15th (Wed)
2. Time: 3:00-4:00pm Taiwan Time; 8:00-9:00am Germany Time
3. Topic: From the Ground to Space, From Heavy-ion Physics to Cosmic Ray
4. Speaker: Yi Yang, Associate Professor, Department of Physics, National Cheng Kung University



5. Moderator: Guy D. Moore, Professor, Department of Physics, Technische Universität Darmstadt



6. Brief Introduction: In this talk, Associate Professor Yang will briefly introduce the activities of high energy and high energy nuclear physics in NCKU, including the STAR experiment and AMS-02 experiment.

7. Webex Link:

<https://nckucc.webex.com/nckucc/j.php?MTID=macaf5c839d4f3d3f26df1326ba8e6092>