



National Center for Theoretical Sciences

2025

Conference on Advanced Topics and Auto Tuning in High-Performance Scientific Computing

Time

2025/03/21-22

Venue NCKU

Aim & Scope

The 2025 Conference on Advanced Topics and Auto Tuning in High-Performance Scientific Computing (ATAT 2025) focuses on the scientific impacts of the latest computer architectures and the approaches to achieve high-performance computing on these leading-edge computers. Advances in many-core architectures, high-end computers, and the integration of AI and deep learning technologies have revealed their significance in scientific discoveries and engineering achievements. These technologies not only enhance computational performance but also enable innovative approaches to solving complex scientific problems through data-driven methodologies. However, the complexity of these newly developed computers, along with the challenges of optimizing AI and deep learning algorithms, leads to contemporary issues in achieving the best efficiency of highly promising computational capabilities. The conference encourages interdisciplinary communications between researchers from applied mathematics, statistics, computer science, physical sciences, engineering, and industry to prompt innovations and breakthroughs in this exciting field. The main themes include, but are not limited to, simulations, numerical methods, applications, hardware, software, and particularly algorithm auto-tuning via statistical methods, AI-driven models and deep learning techniques in high-performance computing.

Plenary Speakers

Stefano De Marchi (University of Padova, Italy)

Nishiguchi Koji (Nagoya University, Japan)

Invited Speakers

Te-Yao Chiu (National Central University)

Yi-Ju Chou (National Taiwan University)

Toshiyuki Imamura (RIKEN)

Heng-Chuan Kan (National Center for High-performance Computing)

Takahiro Katagiri (Nagoya University)

Bing-Ze Lu (National Cheng Kung University)

Koki Masui (The University of Osaka)

Kengo Nakajima (The University of Tokyo)

Yasutaro Nishimura (National Cheng Kung University)

Torbjörn Nordling (National Cheng Kung University)

Kenji Ono (Kyushu University)

Katsuhisa Ozaki (Shibaura Institute of Technology)

Yu-Chen Shu (National Cheng Kung University)

Matthew R. Smith (National Cheng Kung University)

Hiroyuki Takizawa (Takizawa Tohoku University)

Teruo Tanaka (Kogakuin University)

Yuki Uchino (RIKEN)

Organizers

Ray-Bing Chen (National Cheng Kung University)

Feng-Nan Hwang (National Central University)

Takahiro Katagiri (University of Nagoya)

Chung Gang Li (National Cheng Kung University)

Matthew M. Lin (National Cheng Kung University)

Satoshi Ohshima (Kyushu University)

Yu Chen Shu (National Cheng Kung University)

Weichung Wang (National Taiwan University)

An-Cheng Yang (National Center for High-Performance Computing)

Contact:

Peggy Lee (peggylee@ncts.tw)

