

# THE FIRST INTERNATIONAL CONFERENCE ON MACHINE LEARNING AND PHYSICS



## 第一届“机器学习和物理学”国际会议

July 4 - 6, 2018, Beijing, China  
Insitute for Advanced Study, Tsinghua University  
(清华大学高等研究院 主办)

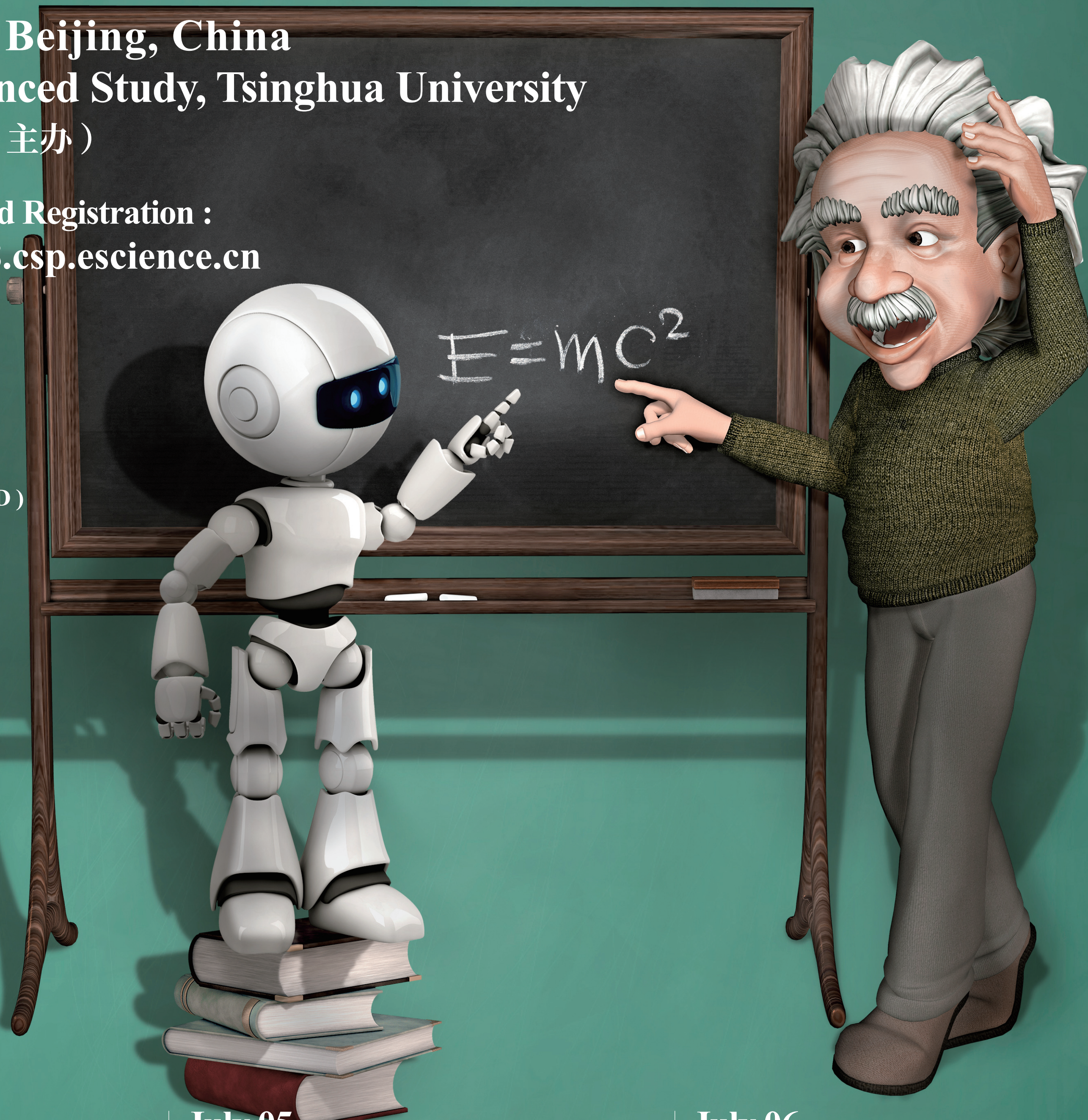
Conference Website and Registration :  
[http:// mlphys2018.csp.escience.cn](http://mlphys2018.csp.escience.cn)

### ORGANIZATION COMMITTEE

Yi-Zhuang You ( Harvard / UCSD )  
Lei Wang ( IoP, CAS )  
Bei Zeng ( Waterloo / Guelph )  
Hui Zhai ( Tsinghua )

### SCIENTIFIC COORDINATOR

Liang Fu ( MIT )  
Xiaoliang Qi ( Stanford )  
Tao Xiang ( IoP, CAS )



### Scientific Program

#### July 04

09:00 - 09:15 Registration  
09:15 - 09:30 Opening  
09:30 - 10:30 Eun-Ah Kim (Cornell)  
*Learning Quantum Emergence with AI*  
10:30 - 11:00 Break  
11:00 - 12:00 Giuseppe Carleo (Flatiron Institute)  
*Neural-Network Quantum States:  
from Condensed Matter to Quantum  
Computing*  
14:00 - 15:00 Kieron Burke (UC Irvine)  
*Creating New Density Functionals  
with Machine-learning*  
15:00 - 16:00 Lexing Ying (Stanford)  
*Solving PDEs with Deep Learning*  
16:00 - 16:30 Break  
16:30 - 17:30 Gábor Csányi (Cambridge)  
*A New Dawn of Interatomic Potentials*

#### July 05

09:30 - 10:30 Hans J. Briegel (Innsbruck)  
*Machine Learning and Projective  
Simulation in Quantum Physics Ex-  
periments*  
10:30 - 11:00 Break  
11:00 - 12:00 Evert van Nieuwenburg (Caltech)  
*How Confused is My Network?*  
14:00 - 15:00 Matthias Rupp (FHI Berlin)  
*Machine Learning for Interpolation  
of Electronic Structure Calculations*  
15:00 - 16:00 José Miguel Hernández-Lobato  
(Cambridge)  
*Advances in Machine Learning for  
Molecules*  
16:00 - 16:30 Break  
16:30 - 17:30 Lei Wang (Institute of Physics, CAS)  
*Neural Network Renormalization Group*  
17:30 - 18:30 Poster Session

#### July 06

09:30 - 10:30 Fakher F. Assaad (Wuerzburg)  
*Monte Carlo Simulations of Quan-  
tum Matter*  
10:30 - 11:00 Break  
11:00 - 12:00 Huitao Shen (MIT)  
*Boosting Quantum Monte Carlo Sim-  
ulations with Machine Learning*  
14:00 - 15:00 Jim Halverson (Northeastern)  
*Reinforcement Learning and the  
String Landscape*  
15:00 - 16:00 Daniel Roberts (Facebook AI Research)  
*Why is AI hard and Physics Simple?*  
16:00 - 16:30 Break  
16:30 - 17:30 Yi-Zhuang You (Harvard / UCSD)  
*Machine Learning Holography*  
17:30 - 18:30 Discussion and Concluding