Rump Session

Machine Learning and Many-Body Physics

2017.7.6 Kavli ITS, Beijing

"Can we circumvent the sign problem in quantum simulations using artificial neural networks?"

—**Ehsan Khatami**

"I'm interested in whether the sign problem could be solved by machine learning technique."

—**Junya Otsuki**

"Confidence estimates (estimating how reliable a prediction is) are necessary in practice."

— **Matthias Rupp**

"Shall we view ML as a qualitative or quantitative tool ?"

—**Ye-Hua Liu**

"Are there problems for which feeding the wave-function into a machine learning model could be advantage ?"

— **Maria Schuld**

"Aren't quantum data more complex than images?
Shall physicists invent new network architectures to account for them ? "

— **Pan Zhang**

"Is there a way to reveal the function of a neural network to make it less a black box? I heard a little bit about 'dreaming', is there any other systematic way to achieve this?"

— **Wei Zhang**

"How to understand the results of neural network when it is applied to an inconclusive field ?"

— **Huike Jin**

"Beyond simulations, what machine learning can do?
AlphaGo seems to have learned the intuition of Go. Can Deep learning bring new intuitions of physics?"

— **Yaobo Zhang**

"A self-learning robot that teaches physicists physics ?"

— **Dong-Ling Deng**

"Science is full of surprises. Are there examples in machine learning ?"

— **Fuchun Zhang**

"How do you picture the 'buzzing phase' of machine learning in physics?
e.g. how long do you expect until the appropriate usage spreads in cond-mat field?"

— **Nobuyuki Yoshioka**

"Is Machine Learning only for computational people ?
I can not (do not want to) program, what can I do?"

— **Anonymous**