# [Program]

# Large-scale lattice QCD simulation and application of machine learning

## November 23

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|---|---|---|
| 09:25–09:30 | Takeshi Yamazaki | Welcome address |
| 09:30–10:15 | Masaaki Tomii | Recent status of $K \to \pi\pi$ calculation by RBC/UKQCD with periodic boundary conditions |
| 10:15–10:45 | | Coffee break |
| 10:45–11:30 | Jonna Koponen | Muon g-2 program in Mainz |
| 11:30–13:30 | | Lunch break |
| 13:30–14:15 | Marco Cè | Master-field simulations and observable strategies for very large lattices |
| 14:15–14:40 | Kohei Sato | How to directly calculate pion charge radius without fitting |
| 14:40–15:10 | | Coffee break |
| 15:10–15:55 | James Zanotti | Hadron structure via the Feynman-Hellmann theorem |
| 15:55–16:20 | Ryutaro Tsuji | Axial structure of the nucleon in large-volume lattice QCD at the physical point |
| 18:00–20:00 | | Banquet |

## November 24

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| 10:00–10:45 | Xiaoyong Jin | Neural network gauge field transformation and its application in HMC |
| 10:45–11:15 | | Coffee break |
| 11:15–12:00 | Yukari Yamauchi | Complex control variates |
| 12:00–12:10 | | Group photo |
| 12:10–14:00 | | Lunch break |
| 14:00–14:45 | Christian Schmidt | On the analytic structure of the QCD phase diagram |
| 14:45–15:10 | Ken-ichi Ishikawa | Wilson-Clover quark solver implementation on the supercomputer Fugaku |
| 15:10–15:40 | | Coffee break |
| 15:40–16:05 | Shinji Ejiri | Phase structure of finite temperature and density lattice QCD in the heavy quark region |
| 16:05–16:30 | Jishnu Goswami | Characterizing Strongly Interacting Matter at Finite Temperature: (2+1)-Flavor QCD with Mobius Domain Wall Fermions |
| 16:30–17:00 | | Coffee break |
| 17:00–17:25 | Yuki Nagai | Self-learning Monte Carlo method with equivariant Transformer |

## November 25

| 10:00–10:45 | Christoph Lehner | Gauge-equivariant multi-grid networks |
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| 10:45–11:15 | Coffee break | |
| 11:15–12:00 | Julian Urban | Properties and uses of approximate trivializing maps in lattice QCD |
| 12:00–14:00 | Lunch break | |
| 14:00–14:25 | Takeshi Yamazaki | Calculations using PACS10 configuration |
| 14:25–14:50 | Yoshihiro Michishita | Application of Reinforcement Learning to the development of theoretical analysis methods |
| 14:50–15:20 | Coffee break | |
| 15:20–15:45 | Masakiyo Kitazawa | Machine learning topological sector of Yang-Mills theory |
| 15:45–16:15 | Coffee break | |
| 16:15–18:00 | Discussion | |