

Welcome to workshop "3D hadron structure from next- generation scattering experiments and lattice QCD"

Ian Cloët (ANL), Kyungseon Joo (UConn), Shinya Sawada (KEK/J-PARC),
Kazuhiro Watanabe (Seikei U.), Christian Weiss (JLab)

6th Joint Meeting of the APS-DNP and JPS
11/27/2023, Hilton Waikoloa Village, HI

3D hadron structures

- current status -

- 3D structures are mapped onto GPDs and form factors.
- Many ongoing and new experiments: JLab, BNL, J-PARC, COMPASS, HERMES, and EIC. Electromagnetic and hadronic probes are complementary to each other.
- Novel techniques, including a neural network method in AI, are developed.
- Rapid progress on theory, including Lattice PDFs and LaMEFT (= Large-momentum effective field theory).
- Lattice data significantly impact QCD global analysis.

Goals of this workshop

- Summarize recent progress and future perspectives.
- Exchange thoughts towards a high-precision era: inverse problems in PDF/GPD extraction, numerical resources.
- Discuss how lattice QCD can shed light on nucleon 3D structures and help in their extraction from data.
- Share ideas for measurements/observables, sensitive to 3D structures.
- Explore complementarity of electromagnetic and hadronic probes of 3D hadron structure.

Session 3WQA: 3D Hadron Structure from Next-Generation Scattering Experiment and Lattice QCD I

[Show Abstracts](#)

Invited Workshop

Chair: Kazuhiro Watanabe, Seikei University
Room: *Hilton Waikoloa Village Kona 2-3*

Monday, November 27, 2023
9:00AM - 9:30AM

[3WQA.00001: 3D tomography of hadrons with hadron and lepton beams](#)
Invited Speaker: Shunzo Kumano

Monday, November 27, 2023
9:30AM - 10:00AM

[3WQA.00002: Deep-inelastic scattering and Drell-Yan process for the 3D structure of the nucleon](#)
Invited Speaker: Toshi-Aki Shibata

Monday, November 27, 2023
10:00AM - 10:30AM

[3WQA.00003: Study of 3D nucleon structure at the J-PARC \$\pi 20\$ beamline](#)
Invited Speaker: Tomida Natsuki

Session 3WQB: 3D Hadron Structure from Next-Generation Scattering Experiment and Lattice QCD II

[Show Abstracts](#)

Invited Workshop

Chair: Ian Cloet, Argonne National Laboratory
Room: *Hilton Waikoloa Village Kona 2-3*

Monday, November 27, 2023
11:00AM - 11:30AM

[3WQB.00001: Single diffractive hard exclusive processes for the study of generalized parton distributions](#)
Invited Speaker: Zhite Yu

Monday, November 27, 2023
11:30AM - 12:00PM

[3WQB.00002: SoLID Double Deeply Virtual Scattering in Hall A Jefferson Laboratory](#)
Invited Speaker: Alexandre Camsonne

Monday, November 27, 2023
12:00PM - 12:30PM

[3WQB.00003: DVCS and HEMP at COMPASS experiment for GPD studies](#)
Invited Speaker: Takahiro Iwata

Monday, November 27, 2023
12:30PM - 1:00PM

[3WQB.00004: Recent progress on nucleon form factors in lattice QCD at the physical point](#)
Invited Speaker: Shoichi Sasaki

Monday, November 27, 2023
1:00PM - 1:30PM

[3WQB.00005: Accessing x-dependent GPDs from lattice QCD](#)
Invited Speaker: Martha Constantinou