



May 12-15, 2022

# Welcome to “Physics in LHC and Beyond” and “Matsue”

~60 people on-site and ~100 people online

The original idea to hold this workshop was that we'd like to have an international workshop for our grants of “New expansion of particle physics of post-Higgs era by LHC revealing the vacuum and space-time structure” ([ヒッグス粒子発見後の素粒子物理学の新展開～LHCによる真空と時空構造の解明～](#)), which was finished in March 2021.

We have postponed this workshop a few times from Oct 2020 due to Covid-19.

# The Standard Model and Beyond

- At the LHC ATLAS (the main target of our grants) we have been searching for Beyond Standard Model but so far no clear indication.
  - This year is the 10<sup>th</sup> anniversary of the Higgs discovery.
- However, we know that there are some interesting hints for BSM.
  - The existence of the dark matter (and dark energy) from CMB.
  - Discrepancies
    - Muon  $g-2$
    - B-anomalies
    - W-mass (it's new)
- In this workshop, we'd like to discuss something to change the game for not only physics but also detector, trigger, data-analysis technology and so on covering the present LHC, future LHC/colliders and non-collider experiments.
  - 27 invited talks and 21 open-call for participants talks
  - Having useful discussions is the key of this workshop.
    - Each speaker: please keep the allocated time. **5 minutes for Q&A are included.**

# Infection prevention against Covid-19

- We need to take counter measures against the corona virus!
  - This is very important to the success of this workshop.
- For all the attendance, please have an **antigen test** in the first day when you arrive.
  - The antigen test is available in the registration desk.
- Avoid the “Three Cs”:
  1. Closed spaces
  2. Crowded places
  3. Close-contact settings
- Please **wear a mask**.
- **No excursion and no workshop dinner**
  - A long break of about 6 hours will be in the 2<sup>nd</sup> day (tomorrow).

If you have questions about practical issues etc., please come to the registration desk.