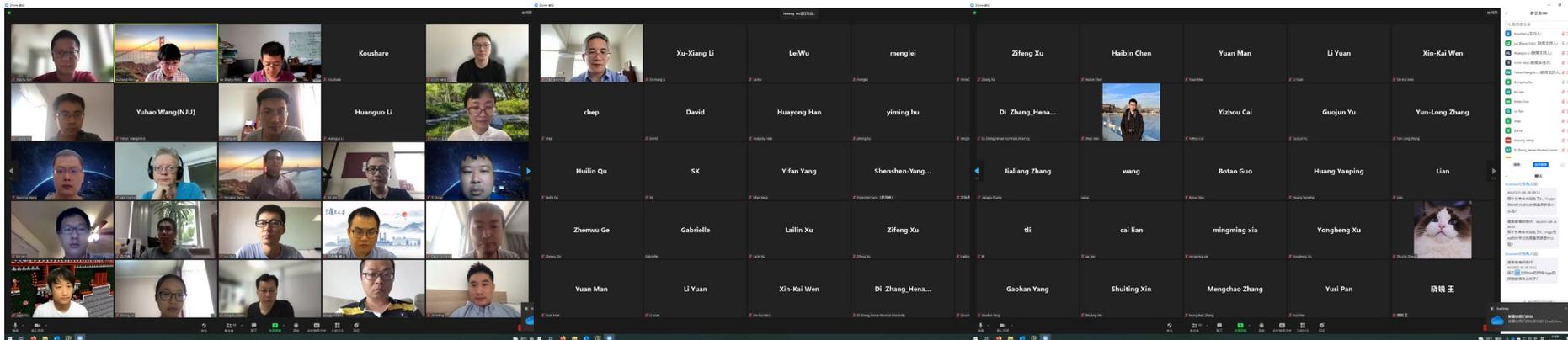




江苏省物理学会
JiangSu Society of Physics



Workshop on Higgs potential and BSM opportunities





Busy agenda

- **Pre-school:** Three lectures: SM, BSM Higgs, experimental Higgs physics
- **SM Higgs session:** precise measurement of Higgs boson, indirect BSM new physics search via Higgs boson measurement.
- **Di-Higgs session:** Higgs self-coupling, Higgs potential, EWPT, BSM new physics via di-Higgs or di-scalar, EWPT in Cosmology or Gravitational wave.
- **BSM Higgs session:** searches for extra BSM Higgs, including both heavy and light scalars.
- More than 40 talks, 122 registrants
- Participants (ZOOM+Koushare): 100+ in pre-school, ~60 in workshop

Successful pre-school and workshop

Why so successful (or not bad)? ;-)



- Higgs is still the exciting area in the particle physics
- EWPT get more attention inside&outside the particle physics community
- Scalar is essential to produce transition in Cosmology which leads GW
- Theorists and experimentalist joint oriented, brings more audiences and more discussion

➤ Workshop language:

- I was afraid that using English would be a disadvantage. But it seems fine in this workshop

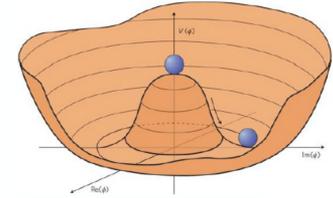


Future

- Puzzles in Higgs or scalar sector remains
- This workshop meant to be beginning of boosting the Higgs study effort in China
- PKU expressed the interest informally to host the next Higgs workshop in 2022. If any of you are also interested, please let us know.

Known Unknowns of the SM

- The Clue:
- Inflation
- **Mass** hierarchy
- Neutrino **mass** & Oscillation
- Matter anti-matter asymmetry
- Vacuum stabilities: depends on particle **mass**
- Dark matter, Dark energy: nature & origin of its/their **mass**
- Naturalness: EW (Higgs **mass**) V.S. Planck scale
- Flavor Structure: **mass** & flavor eigenstates
- ...



28/8/2021

Higgs & BSM @ Nanjing

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- Suggestions on topics, organization form, etc, are welcome!

Thank You!