# Physics Software & Computing US HFCC Level-2 Area

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## Charge & Scope to the HFCC-PSC L2 working group

#### Charge Item 4 to HFCC:

 "Conceptualization of the software and computing framework that will be needed to advance physics studies and R&D efforts; and to collect, store, and analyze the large volumes of physics data at future collider experiments"

#### Charge Item 6:

- "Ensure collaborations by the U.S. with our partners are cost-effectively carried out to advance the future Higgs factory initiatives. (CPAD, ECFA, DRD, others)"
- Should now add newly forming APS/DPF "Coordinating Panel for Software and Computing"

## Also, importantly,

- provide infrastructure and computing resources in support of physics studies and R&D
- provide software, computing, and user support to enable the US community to participate in and provide leadership to the future collider efforts

## Physics Software & Computing

Dual mandate for this group:

- Development of Software and Computing resources for Higgs Factories
- Increasing engagement of US physicists in Higgs Factories through training opportunities

<u>Current focus</u>: identifying interested people/groups; developing resources for new users; and understanding where the US can/should engage more in existing international PS&C efforts

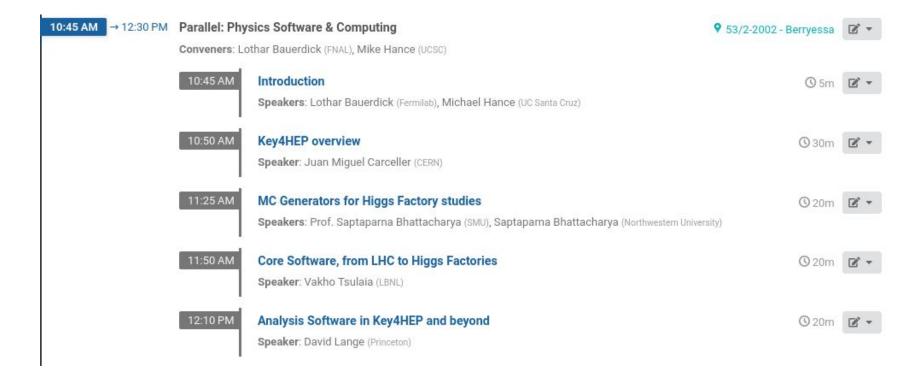
See <u>kickoff meeting</u> for more details on some specific target areas, including:

- Physics SW
- Core SW
- Computing

## Goals for this week

- Understand the current status of ILC/FCC software and computing
  - Key4HEP software ecosystem
  - Relationship to LHC software
  - Existing/planned US efforts
- Identify PS&C-related challenges for detector groups
  - Joint session with AIM/TDAQ this afternoon
  - Plenary session on simulation studies at end of day on Thursday
- Plan the US/HFCC response to the ESG questions
  - Most of the day on Friday
- Connect with each other!

## Session agenda



## Backup

## **Proposed Organization**

#### Level-3 areas:

## Physics Software

 Software that directly supports physics studies, including generators, detector sim/digi/reco, and analysis software.

#### Core Software

 General Key4HEP software development, including GAUDI, support for alternative architectures, data formats and I/O.

### Computing

 Development of computing resources to support national and international Higgs Factory activities. Grid computing sites for production jobs; analysis facilities for US physicists; HPC resources.