THE KAVLI FOUNDATION

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U.S. DEPARTMENT OF ENERGY | Office of Science

Physics Summary

TOVA HOLMES, U. OF TENNESSEE

MAY 16, 2025

IMCC ANNUAL MEETING

What are our highest priority targets?

- Much discussion on clarifying the neutrino case
  - Primary target is non-oscillation folks, since our ultimate beams are less useful for this
  - Also need to think more about the broad case with demonstrators, staging (possibly including oscillation)
- How do we raise the profile of MuC in Europe?
  - Could involve more communities, e.g. flavor

What are our bottlenecks?

- We need at least annual tutorials with updated documentation
- Beyond the basics in the tutorial, a main limitation is scaling
  - Need more experts who can run full-scale, and also better examples for analyzing at scale
- We could use shared gen-level samples
  - Consistent gen-level filters for benchmarking
  - Backgrounds including Whizard
- Delphes cards are often insufficient in the face of BIB-driven limitations
  - Can we use pileup overlay functionality to make an attempt at Delphes fakes?
  - Are we better off creating something more like reinterpretation materials?
  - Let's make no-BIB parameterization, as well as optimistic and pessimistic BIB parameterization

How should we be organizing work?

- We have many interested new people and have a hard time placing them
  - Can we support more entry-level work? Do we have enough low-level meetings for discussion of weekly work? Is this possible?
  - How do we onboard PIs instead of onboarding just students?

How do we communicate?

- Focus on in-community recruitment:
  - Need to increase colloquia – including to “less muC-friendly institutions’
  - Tack on muon collider talks and tutorials to other training events (e.g. CMS DAS)
  - Recruit people who have funding
    - e.g. US LHC folks who can spend partial base grant time on future colliders
    - (other examples like this?)