

Pitt PACC welcomes you!



Pittsburgh Particle Physics, Astrophysics, an Cosmology Center (Pitt PACC)



- Mission: Enhance research activities for these fields, facilitate and strengthen theory/experiment collaborations, promote local and national research to the community
- Host topical workshops (e.g., Nu Tools), larger conferences and schools (Pheno Symposia, CTEQ school), visitor program (e.g., sabbatical), public lectures,
- You can join Pitt PACC - consider becoming an associate member!
 - Receive announcements for our activities (workshops, seminars, etc.), organize a workshop, free Pheno registration, ...

Nu Tools for BSM at Neutrino Beam Facilities

- Current and future neutrino beam experiments have great potential to search for new light physics beyond the Standard Model!
- Realizing this program requires accurate theoretical description & modeling of (i) BSM production, (ii) BSM signatures, and (iii) backgrounds (e.g., from beam-related neutrino processes).
- Comprehensive simulation tools / framework both for phenomenological studies and experimental analyses does not currently exist.
- Contrast with the pipeline for LHC studies:
 - Lagrangian \rightarrow Feynrules \rightarrow Madgraph \rightarrow Pythia/Herwig \rightarrow Delphes or ATLAS, CMS detector simulation \rightarrow analysis \rightarrow limits (or discoveries!)
 - Can a similar framework be developed for neutrino beam experiments?
- Goals of the workshop - foster new ideas / collaborations and develop a path forward towards a comprehensive BSM simulation framework for these experiments.

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- Joshua Berger, Arnab Dasgupta, Bhupal Dev, Bhaskar Dutta, Joni George, Tao Han, Doojin Kim, Donna Naples, Keping Xie, Jae Yu
- And special thanks to Joni George for handling all of the logistical organization!

**We hope you enjoy the workshop and
your visit to Pittsburgh!**