

Introduction

HSF Generators WG

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Recent news

- First meeting back after a long hiatus!
- We have a change of conveners
 - Outgoing: Andrea Valassi
 - Incoming: Markus Diefenthaler
- We have written a short review review of activities last year and plans for the coming year:
 - <https://hepsoftwarefoundation.org/organization/planning/plan-of-work-2022.html#event-generators>
- Snowmass Generators Whitepaper
 - We added some input from the HSF side based on LHCC review and previous WG paper
 - Stefan will give us an update today!

Many thanks to Andrea!

Welcome to Markus!

Upcoming meetings

- We are starting to plan future meetings through the rest of the year
 - We thought it might be useful to generally have meetings on the first Thursday of each month (with some variation around holidays etc.)
- Tentative schedule (to be confirmed!):
 - 10th March: Snowmass Generators Whitepaper
 - 24th March: Recent ATLAS V+jets paper discussion ([link](#))
 - 7th April: (TBC) Generator usage for neutrino experiments
 - 5th May: EIC/NP Generators usage
- Other foreseen topical meetings to be scheduled
 - Negative weights and resampling algorithms
 - Progress in GPU/vector CPU porting
 - AI/ML methods for Event Generation

Miscellanea

- We would like to build up a “living review” (à la [HEPML-LivingReview](#)) to document papers related to the WG activities

Back-ups

Miscellaneous recent papers of interest

- Style-based quantum generative adversarial networks for Monte Carlo events:
<https://arxiv.org/abs/2110.06933>
- Unbiased Elimination of Negative Weights in Monte Carlo Samples:
<https://arxiv.org/pdf/2109.07851.pdf>

Plans for 2022

- Snowmass White Paper on Event Generators
 - To highlight opportunities in event generator development that span several frontiers and experimental facilities, such as the LHC, next-generation neutrino experiments such as DUNE and HyperK, Belle II, the EIC, the Forward Physics Facility, Heavy Ion experiments and future colliders.
 - Invited to prepare a contribution (~2 pages) on the *computing performance of event generators, with a focus on recent work in the HEP Software Foundation*.
 - MCnet collaboration will write an overview on efforts that are not covered under the HSF umbrella.
 - A first draft is almost ready.
 - Deadline March, 15th but aiming for a first draft by the end of January.