

News

Computational Frontier Convener Meeting @ Snowmass2021

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What we would like to talk about

- Role and Mandate of Computational Frontier in Snowmass 2021
 - We're not producing simulations for other frontiers!
- Roundtable
 - In your own words, what is your topical group working on
 - Check understanding of mandates, probe topical group setup for holes in coverage
 - What are your plans for your topical group
 - Updates on what has been achieved so far
 - Plans for recruiting for your topical group
- Interaction with outside Snowmass
 - How can we make sure that others know of Snowmass and what we plan to do?
- Community interaction
 - Literature search - find reports relevant for your topical group
 - Survey - start to collect questions?
 - Lol and white papers: encourage the community to send contributions?
 - Workshops!!!
- Communication
 - Do we need individual mailing lists for topical groups?

Communication

- Do we need mailing lists for all topical groups?
 - @indiana.edu or @fnal.gov ?
- Slack setup seems solid?
- Can everyone edit their wiki pages on <https://snowmass21.org> ?

Role of Computational Frontier

- Our role is to represent the needs of and opportunities for the HEP community (all frontiers, directions, experiments, theoretical approaches, etc.)
- We are not producing simulations for other frontier activities
 - We brought the Energy Frontier in contact with OSG
 - OSG will provide access to resources, both compute and storage
 - Energy Frontier will have a team (task force) to use these resources
 - Model for other frontiers
- Discussion of containers in compf07-preservation slack channel
 - Good: exploring what the community needs, now and in the future
 - Bad: expectations that Computational Frontier is designing and providing containers for specific purposes
- Other examples?

Roundtable

- Go through the topical areas and ask
 - What are your plans for your topical group?
 - Updates on what has been achieved so far
 - Plans for recruiting for your topical group
- In your own words, what is your topical group working on
 - Check understanding of mandates, probe topical group setup for holes in coverage
- Example from compf01-expalgos slack channel:
 - "I am still struggling to understand what the aim of the expalgos working group is in the context of the Cosmic Frontier (CF) Experiments. The functional areas you describe on the wiki are very collider experiment focused and don't match well to CF. The types of experiments we do in CF vary widely (dark matter direct detection, imaging surveys, spectroscopic surveys, CMB, intensity mapping .. the list goes on) and each of these have distinct algorithms for data processing and data analysis."
 - We tried to structure the software and computing workflow into separate groups so that individual groups are not too big. What we thought of is:
 - software algorithms that need input data (expalgos) vs. software algorithms that don't need input data (theorycalsim)
 - software that is written by smaller groups (expalgos and theorycalsim) vs. software that is written by almost anyone (useranalysis, making plots and tables)
 - All that is governed by our initial thoughts about the future of software and computing:
 - Software will have to utilize a much greater variety of CPU-based and accelerator-based processing resources
 - Science workflows will produce unprecedented data volumes
 - Extracting scientific results from the data will require an even tighter collaboration of domain scientists and computer scientists with the increased need for training and qualification
 - Training, build up and retention of experts is crucial to the success of the community
 - so we thought expalgos would look at all the algorithms that process data to extract information, what they will look like in the future (needs from the science frontiers), how they will adapt to the changes in the available hardware architectures
 - the input to these algorithms either come directly from instruments, or from theoretical calculations/simulations
 - and the output would be consumed by useranalysis
 - Proposed action item: Prepare cartoons for each frontier of their workflows and how these workflows use computing.

Discussions

- Interaction with outside Snowmass
 - How can we make sure that others know of Snowmass and what we plan to do?
 - Should we be proactive for example with HSF (HSF leaders asked to meet with us to discuss Snowmass contribution similar to European Strategy Group contribution), how can we reach more people? Other organizations we should reach out to?
- Community interaction
 - Literature search - find reports relevant for your topical group
 - Survey - start to collect questions?
 - Lol and white papers: encourage the community to send contributions?
- Workshops!!!
 - Computational Frontier Virtual workshop in July/August ?
 - Attach to other frontiers?
 - EF announced already meeting (date?), they ask us to come and talk for some minutes