

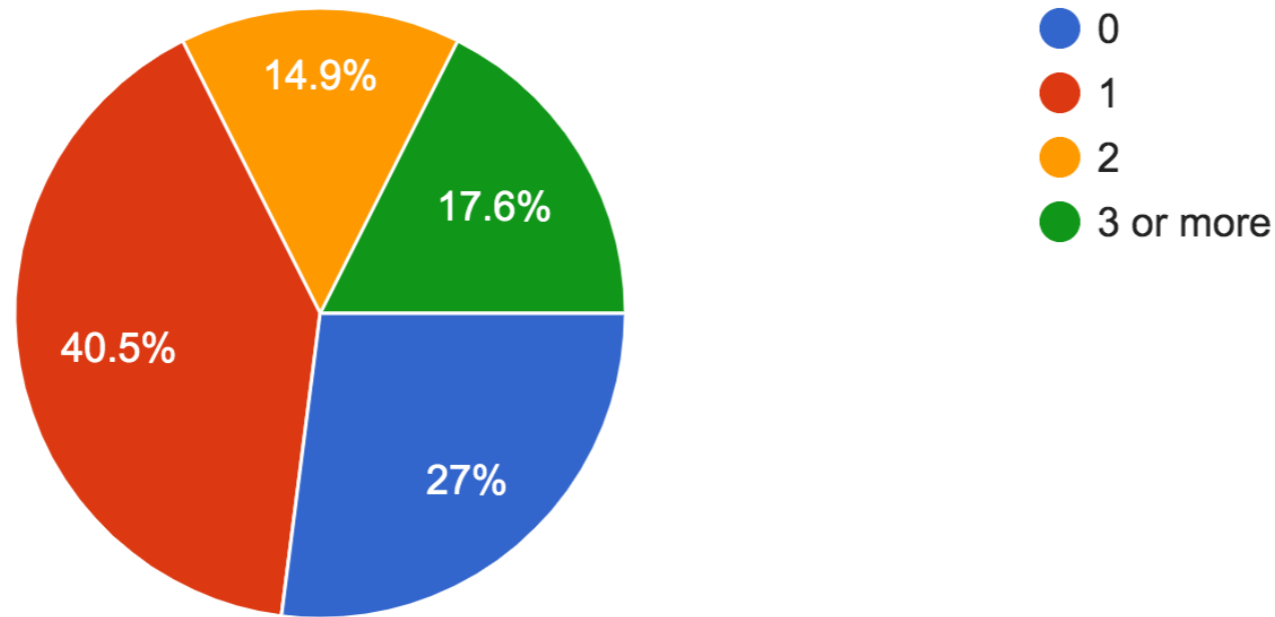
LHC LLP Community Survey Results

5th LHC LLP Community Workshop
29 May 2019

(long-form responses are an attempt at a
representative subset of all submissions)

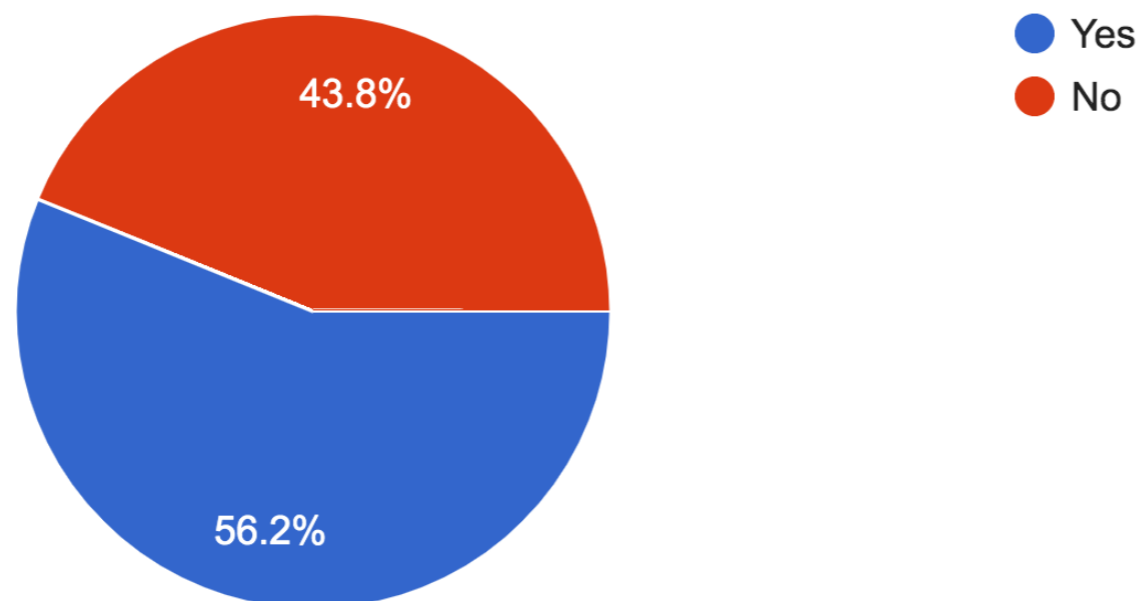
How many of the semi-annual LHC LLP workshops have you attended?

74 responses



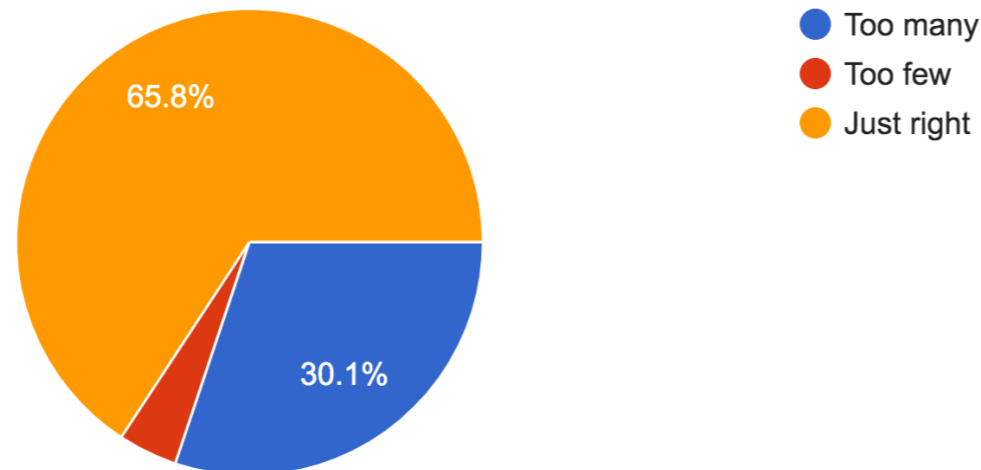
Have you been unable to attend a workshop due to financial and/or time reasons (teaching commitments, etc)?

73 responses



Is two workshops a year (one at CERN, one elsewhere)...

73 responses



- Two general workshop / year I feel are a bit too much. I'd support two / year if more focused and more working-style workshops.
- CERN is the ideal location for this kind of meetings, IMHO. Sparse agendas, that allow plenty of time for discussion, are also a good idea
- One at CERN and one off site looks good, if we get enough attendance for off-site
- Make it annual formal workshop outside CERN
- One per year at CERN is sufficient unless some new observation/discovery or theory breakthrough occurs. Having at CERN allows one to take advantage of other work while at CERN
- I believe that the CERN - elsewhere rhythm is a very good idea.
- I think it would be useful to have workshops with narrower focus and/or specific, well-defined goals. It's hard now to know in advance if a given workshop will be relevant for my work (enough to justify travel)

Please provide feedback on the process of envisioning and writing the LHC LLP white paper. What went well, and what could be improved for future initiatives?

- Took a bit long to complete (for obvious reasons). Not sure on which fraction of the community we had engaged. Maybe we tried to do too much for this first paper?
- I think the amount of topics covered in the white paper was a very good summary of the current status of LHC LLP searches!
- An extremely well written paper with small focus on different aspects of LLPs. However specific topics such as displaced leptons can be expanded with past, ongoing and future analyses possible along with Run 3 trigger improvements
- I feel in many chapters (although not all), it had a review style rather than a white paper. I think a set of more focused and shorter white papers from the community may be more effective.
- It came too late to influence Run 2 and too early to influence HL-LHC. It should have addressed opportunities during Run 3
- It took very long; schedule and reasons for delays were not communicated well (actually hardly at all)
- It was a strong document produced in the end and I found it really helped open lines of communication between experimentalists and theorists.

Are there topics in LLP theory, phenomenology, or experiment that you think has not been sufficiently addressed or explored? If so, which ones?

- The fixed target/beam dump community has come to rise up and they made some comparison plots which in part take LHC prospects into account. Probably we need to work closer with that community
- Collider simulation and cosmological arguments (maybe create a link with the DM WG if not done already)
- Focus even more on signature-driven searches rather than theory-driven
- Run 3 trigger improvements with focus on specific topics say how to effectively do vertexing of very displaced leptons that have no tracker information
- Nope, I think you do a good job in covering the bases.
- Simulation!
- Confining hidden sectors (dark showers, quirks, etc). Color-charged LLP propagation through material. Triggering, especially with new detector capabilities and new luminosity conditions.

Do you have any big-picture goals/suggestions for the community to focus on in the next 3-5 years?

- We have done a good job cataloging all the experiments and analyses and results done, underway, and planned. But we have not prioritized them or given much opinion on what are the most important experiments to pursue. I would be good to put out a "P5-like" short (~10 page) document highlighting near-term opportunities and priorities.
- Triggers, triggers, triggers!
- I think we should keep a fairly loose structure, with small working groups formed as needed to solve specific problems, as they come up. The most important thing to tackle in the near future is convincing the experiments to dedicate significant trigger bandwidth to LLPs in Run 3.
- Backgrounds at the LHC, HL-LHC and future colliders. Making the experimental input accessible, establishing a framework for legacy support.
- The community did its job and should disband
- Pay more attention to the strongly-coupled dark sector?
- Keep discussing frequently, but also, execute more and do more

We welcome any additional comments!

- LLP FTW!
- Expand scope to LLP also outside LHC (future experiments/colliders/non-collider)
- As in this area the methods are more important than the results, it would be great if the organizers, in concert with the relevant group/subgroup conveners in the big collaborations, negotiate with the Physics Coordinators of the main experiments some formula that allows collaboration members to present significantly more additional material with respect to what is usually available.
- Many collaborations have established standard approaches, software packages or whatever for LLP searches. It is good to have things harmonized but one should also keep in mind that thinking out of the box and doing non-standard things are very important. We do not want centralization or harmonization to backfire on us.

Looking Forward...

- Many different goals: which ones are appropriate for whole-community initiatives, and which should be tackled individually or in smaller groups?
- Meetings: should be structured & scheduled to support our goals! Many different purposes: presenting results, brainstorming, coming up with concrete proposals, informal chats, ...
- Organization: more (de-)centralized? More or fewer activities? How to ensure as broad representation of community as possible?
- Any pressing deliverables for the community? (Run 3 triggers come up a lot!)
- **Concretely:** fall workshop this year? continue current timing?

*We are eager to hear your thoughts,
suggestions, and proposals!*