

APPEC
Scientific Advisory Committee
Report
9 December 2020

Sijbrand de Jong (SAC chair)

SAC meetings since previous GA meeting

- 25 September 2020
 - Extraordinary SAC meeting
 - Dedicated to Midterm Roadmap review report
 - Also shortly discussed Snowmass process
- 4 November 2020
 - Regular SAC meeting
 - Updated by GA chair on neutrinoless double beta decay follow-up
 - Updated on relation to ESFRI Working Group PSE by Job
(We should have an observer in this group, Job is working on it.)
 - Discussion on DDMD report: final comments on draft and scheduling the process
 - Status update of EUCaPT by Gianfranco Bertone
 - Discussion on Midterm Roadmap review report

Snowmass process

- The SAC signals that in the Snowmass process by the Division of Particles and Fields of the APS, aimed primarily at the DoE Particle Physics Project Prioritization Panel (P5), astroparticle physics (called cosmic frontier) takes a significant part of the agenda with nearly 400 (!) letters of interest (i.e. proposals for white paper material) submitted.
- Aside: the recent news is that in view of Covid-19 delays in executing the present P5 programme, DoE would not mind having the P5 process delayed. Delaying the Snowmass process for up to a year (report in 2022 instead of 2021) is being discussed.

Neutrinoless double beta decay follow-up

- After the release of the neutrinoless double beta decay committee report the SAC follows the developments with interest and desires to be kept informed about the progress, in particular the alignment and/or agreement with the stakeholders parties outside Europe.

EUCaPT

- The SAC took note of the EUCaPT progress report by its director, Gianfranco Bertone
- It was suggested to find ways to spread interesting info to national mailing list and also to make use of CERN dissemination channels.
- EuCAPT is preparing a White paper about APP Theory prospects. A full draft will be discussed at the Annual meeting in May 2021. After that it will take half a year to finalise the white paper. It was suggested to have the paper ready as input for the APPEC midterm roadmap review Town Meeting.
- The SAC is positive about the handling of the Covid-19 situations with a shift to remote meetings and the note that access to CERN is not limiting the activities.
- The SAC noted with satisfaction that all the task forces are now staffed and can all proceed without the need of prioritisation.

Direct Dark Matter Detection committee report (1)

- The GA approved the mandate and establishment of the DDMD committee in its meeting of 16-17 May 2019
- The DDMD committee delivered a first version of the report on 15 May 2020, as input to the 19 May 2020 SAC meeting, where it was presented by the committee chair, Leszek Roszkowski, and discussed by the SAC.
- In view of the short availability of the report, further comments were collected by the SAC chair and transmitted to the DDMD committee mid June 2020.
- The committee sent a second draft was to the SAC on 16 October 2020, which was discussed after a short intro by Leszek Roszkowski in the SAC meeting of 4 November 2020. At that meeting **the SAC concluded that the report is both correct and complete**. The SAC also concluded on the course of action to follow in the process to finalise the report.

Direct Dark Matter Detection committee report (2)

- The course of action decided by the SAC:
 - ~~January 2021~~ Online Community feedback meeting to discuss the draft report
 - **2 February 2021** with all stakeholders (in the wider APP community);
 - February 2021 The DDMD committee discusses and adapts where needed the draft report;
 - March 2021 The SAC approves the final draft report for submission to the GA, together with the SAC opinion (a short report or a letter);
- The action proposed to the GA by the SAC:
 - **End March/early April** The GA approves the final report for public release and discusses its position and follow-up actions.
- The suggestion to publish the report in a peer-reviewed journal is under discussion in the SAC, which will formulate an advice to accompany the final draft report when submitted to the GA.

Direct Dark Matter Detection committee report (3)

- The present ad hoc procedures led to some friction between the DDMD committee and the SAC due to mutual expectation not aligned and unclear, because not specified in the mandate.
- The procedure for committee reports like that of the DDMD committee should be better defined, in particular:
 - The position of the GA as final approver of information released on behalf of APPEC;
 - The position of the SAC in steering the process;
 - The organisation of community feed-back;
 - The modality of release of the final report.

Proposal: A proposal will be formulated by the SAC for adoption by the GA

Midterm review of APPEC Roadmap 2017-2026 (1)

- Originally foreseen as input for the October 2020 Town meeting
- Now in progress for delivery well in time for October 2021, SAC wants be able to update the report just-in-time for when it is needed.
- Skeleton and rough text mostly ready
 - Follow Roadmap recommendations with one update section per recommendation
 - Merge the neutrino mass and nature and neutrino mixing and mass hierarchy into one neutrino properties section
 - Add sections on:
 - Multi-probe astroparticle physics
 - Ecological footprint
 - Social impact
 - Human talent management, including diversity, equity and inclusion
 - Inventory of “central” infrastructure
 - Also aim at another attempt at an inventory of current and future required resources

Midterm review of APPEC Roadmap 2017-2026 (2)

- The report is taking shape, but needs still some work in uniformising and the section on “central” infrastructure still has to be written.
- The calendar for the midterm review Town meeting(s) is important to schedule the work on the document in the coming period. The SAC would like to hear from the GA about this schedule.
- A first version of the SAC midterm review report could be discussed in March/April (a bit early), or in June/July.

Final remarks

- The SAC would be happy to take any questions for advice from the GA.
- The SAC chair will be happy to answer, within his ability, any questions you may have after this presentation.