

Minutes of WP-meeting 393

Attendance:

Zoom: Paul Colas, Ulrich Einhaus, Jochen Kaminski, Peter Kluit, Oliver Schäfer, Ron Settles, Jan Timmermans, Maxim Titov, Mingrui Zhao

General News:

Paul mentioned, that the International particle accelerator conference (IPAC) is being held at Venice (<https://www.ipac23.org/>). There, the sustainability studies for Future Linear Colliders will be presented by Maxim. A similar presentation will be given at the LCWS by Benno List. The study was performed by a UK think tank and comprises the complete life cycle of the projects. In particular the carbon dioxide output not only during the operation, but also during the construction are considered. This of course relies on many assumptions like for example the energy mix of France at a given point in the future (estimate: 12.5 kt CO₂ / 1TWh). For construction the largest CO₂ contribution comes from concrete resulting in 6.5t/1km of tunnel and 2.5 kt CO₂ per 1 km accelerator. Including services, this gives an estimate 1km construction ~ 1 year of operation (0.6TWh) for ILC and CLIC. The study will be extended to the circular machines (FCCee and CEPC).

Maxim reported on the progress of the DRD collaboration formation: The DRDC committee still has to be established and also the chair has not been defined yet. Therefore, communication with the committee is not possible and the timeline has been relaxed. The proposal will probably be submitted end of July. DRD1 (gas) has currently the most advanced proposal and about one half of the other DRDs have shown interest in the DRD1 structure (light MoU, WGs and WPs for resource loaded projects) and will copy it. During the last ECFA panel meeting ECFA agreed to this structure.

News from the groups:

Peter gave a presentation on the power reduction of the Timepix family. In standard operation Timepix3 needs about 2 W per chip, which results in 30μW/channel. This would result in a total power consumption of about 80 kW per endplate in continuous operation. The Timepix 3 has a power pulsing option and thus a significant amount of the power could be saved, if operated at the ILC, but not in the case of CEPC. The Tsinghua ASIC would result in a similar power consumption. This digital power could be reduced by choosing a slower clock and the analog power could be reduced by lower gain. The Medipix collaboration has shown operation with a power consumption of 0.216 W/chip, which would result in 8kW/endcap at the cost of a worse time resolution. Similar low power setting have been explored for Timepix4.

Peter also showed the slides for the LCWS.

Paul said Serguei Ganjour and he were currently in Japan for discussion regarding a follow-up proposal of the French-Japanese Lab. They are discussing with Shinya, Daniel and Makoto.

AOB:

The next workpackage meeting will take place on May 25th.