

PERLE Collaboration Meeting at CERN, June 22 and 23, 2023

Potential new members of the Collaboration: ESS Lund, INFN Milan, TU Darmstadt – will be presented to CB when clear

<https://indico.cern.ch/event/1266985/>

In person. Thursday 9am-Friday 4pm. Kjell Johnson Auditorium (ZOOM possible). Dinner Thursday evening

This is a two days meeting of the PERLE Collaboration for discussing progress and plans to build the first high electron current ERL facility, at IJCLab Orsay.

In the focus will be the technical status and accompanying recent developments, including the iSAS initiative towards sustainable accelerator technology and news on LHeC/FCC-eh.

Announcement imminent, email list being completed, but make sure it reaches all your colleagues. **Please register + join.**

Report on ERL Roadmap for CERN Council, Large Lab Directors Group and CERN Science Policy Committee

Jorgen D'Hondt (VUB Brussels, Panel Chair), Max Klein (U Liverpool, Deputy, Spokesperson of PERLE), Jens Knobloch (HZB Berlin, Leader of bERLinPro), Achille Stocchi (Director IJCLab Orsay, Leader of PERLE) and Andrew Hutton (Jefferson Lab, R&D oversight).

10 pages on: Roadmap, iSAS, bERLinPRO and PERLE [both signed a cooperation agreement].

iSAS (cf Achille) hopefully covers much of “generic” R+D, plus first PERLE cryomodule, including a sustainable CM design

Outlook section of the report

A key ambition expressed in the European Strategy for Particle Physics has been that “*the energy efficiency of present and future accelerators [...] is and should remain an area requiring constant attention*”. Accordingly, “*a detailed plan for the [...] saving and re-use of energy should be part of the approval process for any major project*”. The ERL developments are an original and very far-reaching answer to this request. The Roadmap has shown the path forward for European efforts towards high-power ERLs and sustainable technologies towards applications in future particle physics colliders. With the iSAS programme and request to Horizon Europe, uniformly supported by the leading labs and coordinating bodies, such as TIARA and many others, a path is being created for the development of energy-efficient new technologies for SRF and energy recovery linacs. This collaboration of the ERL and the RF panels links well to sustainable technology development efforts forthcoming at CERN. The iSAS project responds optimally to the technology programme laid out in the ERL and RF Roadmaps. In addition, ways have to be found to access the funds detailed in the Roadmap for realising a competitive, far reaching, high-power ERL programme, i.e. for equipping bERLinPRO as a 100 mA, 50 mA LINAC ERL and for building a 10 MW power PERLE as planned. The funding has been detailed in the Roadmap, see *arXiv:2201.04236*, and amount to a total of about 25 MCHF for the next 5 years. This will require attention and support by the Funding Agencies, beyond Germany for bERLinPRO and France for PERLE. Given the outstanding perspectives and benefits, for high energy physics and beyond, the panel is convinced that the success of the ERL programme is possible with the attention and continued support by the CERN Council and the integration of ERLs into CERN's R&D priorities at an appropriate level.

The task ahead is how to finance the bulk cost. ERL panel and LDG have been set up to support this, but our Collaboration needs to find means for PERLE to indeed be built.

Max Klein, PERLE CB, 24.3.2023