



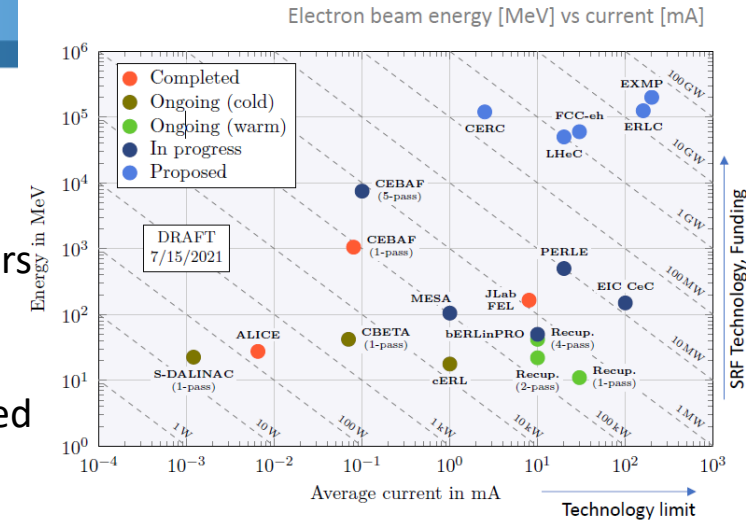
Welcome to the PERLE Collaboration meeting

Achille Stocchi – 11/01/2022



A short story of the last 4 years effort

- ERL developments have been recognised as one of the four main pillars for Accelerator R&D to serve the European Strategy of Particle Physics (ESPP).
- After ESPP recommendations, CERN Council mandated the Laboratory Directors Group (LDG) to define and maintain a prioritised accelerator R&D roadmap
- The LDG decided to create expert panels for each of the four areas of selected priorities for accelerator R&D.
- The ERL Roadmap Panel chaired by Max Klein and Andrew Hutton has done a fantastic work with a large active participation. **PERLE has been recognised as one of the essential “ERL pillar” with milestones to be achieved by next ESPP in 2026 (see Max Klein talk)**
- The Accelerator Roadmap has been presented and approved at the CERN Council in December 2021(*)
- The implementation of the Roadmap will be followed by LDG (Large Labs Director Group). Next meeting 13th January 2022



In the Max talk

- Milestones
 - Financial needs
 - Human Resources needs
- for ERL ESPP Roadmap and in particular for PERLE

(*) “The Council invite ECFA and the LDG to elaborate, in collaboration with the SPC, the funding agencies and the relevant research organizations in Europe and beyond, detailed implementation plans setting out milestones, priorities and funding sources, for consideration by the Council at its Session in March 2022”



The PERLE Collaboration and PERLE in France

➤ PERLE international collaboration



- A Collaboration Agreement (CA) signed by all the partners. Jlab is about signing a bilateral ICRADA with CNRS.
- Collaboration Board chaired by O. Brüning meets regular (every ~3 months)
- Management Board → proposal for discussion (see Max K. talk)

➤ PERLE in France

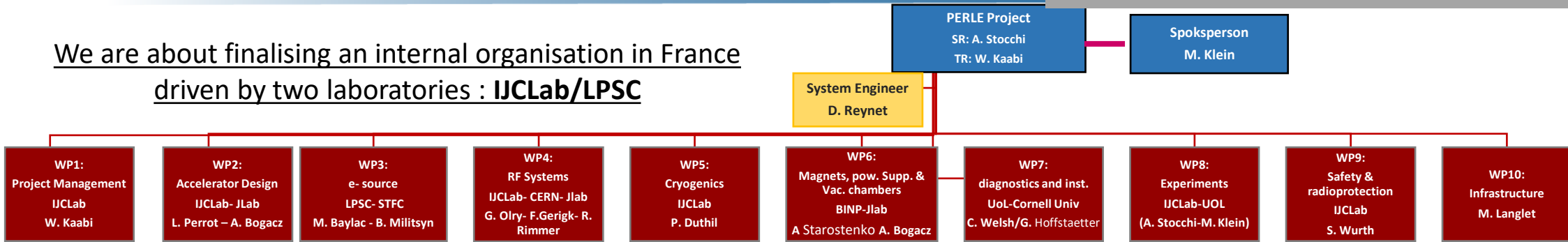
- ✓ National IN2P3/CNRS strategy (end 2021) : Perle@Orsay a priority for accelerator R&D in line with ESPP
- ✓ Two laboratories : IJCLab (Orsay) and LPSC (Grenoble) with a significant increasing of involved people. Contribution from GANIL and interest from CEA
- ✓ Project submitted to Recovery Plan Funding for 2022 (possibility to get financial support for PERLE phase 1)
- ✓ Infrastructure funding obtained. 2M€ available starting in 2022 for PERLE infrastructures.



The PERLE Collaboration and PERLE in France

Tentative and schematic view
Big efforts in France the last months

We are about finalising an internal organisation in France
driven by two laboratories : IJCLab/LPSC



➤ Several new people involved taking responsibilities :

Denis Reynet	System Engineers (IJCLab)
Maud Baylac	Gun Installation and Operation (LPSC)
Luc Perrot	Beam Dynamics (IJCLab)
Guillaume Olry	RF System (IJCLab)
Patxi Duthil	Cryogenic (IJCLab)
Sébastien Wurth	Security Issues (IJCLab)
Marc Langlet	Infrastructures (IJCLab)

+ PostDoc position on injection line on going.
 + PHD between IJCLab/Liverpool
 + permanent CNRS position opened

see more in Walid Kaabi talk

- PHD student (ending now) injection lines : **Ben Hounsell** (100% PERLE)
- PHD student (2nd year) on RF/HOM/cavities : **Carmelo Barbagallo** (100% PERLE)
- PHD student (1st year) on Beam Dynamics : **Coline Guyot** (partial time in PERLE)
- From Feb. 2022
 - Postdoc (beam dynamics) **Alex Fomin**
 - 5 months interns (Magnets/beam dynamics) → PHD thesis 2022: **Rasha Abukeshek**

Yolanda Gomez-Martinez	Coupler design (LPSC)
Bertrand Jacquot	Optical non-linear aberration (GANIL)
Hadil Abualrob	Magnets/Beam Dynamics (IJCLab / An-Najah(Nablus))
Patricia Duschene	HOM and cavities, cryomodules (IJCLab)
Rodolphe Marie	Mechanical Designs (IJCLab)
Alexandre Gallas	Mechanics/Quality (IJCLab)
Christelle Bruni	Beam Dynamics (IJCLab)
Gilles Olivier	Cryomodules design/SPL (IJCLab)
Ningyuan Hu	Design RF/Cavities/HOM (IJCLab)



The PERLE Implementation / Infrastructure

- **SuperACO Hall will host PERLE Machine**
(2M€ available starting in 2022 for PERLE infrastructures)
 - First implementation studies
 - More accurate studies on site on going
 - Securities issues also started

- DC-Gun will be installed and put in operation in **new experimental area (IGLOO)**

In the Denis Reynet talk :
Experimental areas / infrastructures and and first implementation studies



- **DESTIN (DEep STructure Investigation of exotic Nuclei) PERLE@Orsay**

Starts to be structured in Orsay and involving national and international communities. Coupled to the future of GANIL reflexions. A priority for Nuclear Physics Perspectives at national level.

- **Photonics with Inverse Compton Scattering (ICS)**

Important community working in Orsay with large experience in past (Japan, USA) and present ICS experiments (ThomX) and in innovative R&D.

- **ep Physics.**

Important international community with large interest in proton radius, electroweak measurements, dark photons...

**There are no presentations on physics this time.
More to next collaboration meeting**



Agenda of the Collaboration Meeting

Tue. 11th January

13:30 → 15:00 Introduction and Overview

13:30 **IJCLab: Welcome and Plan**
Orateur: Achille Stocchi (IJCLab)

13:40 **Accelerator Roadmap and PERLE Timeline**
Orateur: Max Klein (University of Liverpool)

14:00 **Status of the Project**
Orateur: Walid Kaabi (IJCLab)

14:40 **Footprint and Infrastructure**
Orateur: Denis REYNET (IJC Lab)

15:00 → 15:30 Break

15:30 → 17:30 Design Efforts and Further Needed Steps

15:30 **Injector Design (Including Merger)**
Orateur: Benjamin Hounsell (STFC)

15:50 **Booster Design Adaptation**
Orateur: Fay Hannon

16:10 **Lattice Design (Including IR)**
Orateur: Alex Bogacz (Jefferson Lab)

16:35 **HOM, Cavity design and Prototyping**
Orateur: Robert Rimmer (JLab)

17:00 **Discussion**

Chair : A. Hutton

Chair : M. Baylac

Wed. 12th January

13:30 → 15:30 Components: Installation, Prototyping and further Needs

13:30 **Electron Gun: Components and Installation**
Orateur: Boris Miitsyn (STFC)

14:00 **Magnets: Design and prototypes**
Orateur: Alexander Starostenko (BINP)

14:20 **Beam Instrumentation (TBC)**
Orateur: Pavel Evtushenko (HZDR)

14:40 **Experience with CBETA**
Orateur: Adam Bartnik (Cornell University)

15:00 **Discussion**

15:30 → 15:40 Closeout
Président de session: Max Klein (University of Liverpool)

Chair : O. Brüning