

CompactLight 33% SAC 190703

- **Well off**
- **Significant progress**
- **Already results to integrate at other facilities**

CompactLight

” With CompactLight we intend to **design a hard X-ray FEL facility beyond today’s state** of the art, using the latest concepts for bright electron photo injectors, very high-gradient X-band structures at 12 GHz, and innovative compact short-period undulators. If compared to existing facilities, the proposed facility will benefit from a lower electron beam energy, due to the enhanced undulator performance, be significantly more compact, as a consequence both of the lower energy and of the high-gradient X-band structures, have a much lower electrical power demand and a smaller footprint. ”

CompactLight

Consider

Focus on the toolbox.

The results from the many studies of different solutions and possibilities of these new technologies is a very useful output from CompactLight!

Choose a **limited user case** and use a sub-set of "tools" to show how the techniques can create a compact and cost effective (hard x-ray?) FEL. Make compromises in the selection!

Some quick observations

Project management

- Meeting deadlines 😁
- Deliverables 😁
- Tools (CERN input 😁)
- Reports: restrict the number of details/subsections

WP7

Tech transfer

- Strong industry presence 😁
- Focus on accelerator components
- Leave out scientific applications

WP2

Facility design

- Good overview figure 😁 (but SX and HX)
- 0.1 vs, but later nothing...
- 75pC, is this enough?
- Beam lines. Good this is included!

WP3

Injector

- Still very open
- Several good concepts 😁. Don't lose them!
- Chose one / develop all
- 2 pulse-2 colour: users are picky, match them.

WP4

Linac

- Too much compromise (from compact)
- Nice overall layout 😊, but move from focus.
- Industry input on tolerances and production 😊

WP5

IDs

- Either standard or high risk tech. Difficult choice.
- Continue with the high risk options.

WP6

Beam dynamics, modeling

- Good approach
- Linac optics?
- Strong focusing => twiss(s) and $dP(s)$
- WF and CSR critical.
- 3D simulations
- S2E necessary, but perhaps not "automaticed"



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