



CLICdp welcome + news from CLIC staging baseline



Welcome !

Welcome to the CLICdp meeting !

<https://indico.cern.ch/event/376800/>

56 persons inscribed, ~19 institutes represented

*Apologies for the early morning start and dense agenda
(due to overlap with AIDA-2020 kick off meeting)*

Practical details:

- All presentations in CERN council room
- Institute Board meeting (restricted to IB members) in room 4-S-030
Today at 12 hrs (sandwiches provided)
- **Workshop photo:** today, at end of last session, ~18 hrs

Workshop dinner



Where:

Fromagerie Michelin
Grilly (near Divonne), France

Transport:

Bus at 18:45 hrs
At CERN reception, building 33
Departure 19 hrs sharp!

Menu (local products):

Salads + Charcuterie
Cheese
Fruit + Ice cream

Payment:

38 Euro (or 40 CHF), wine included
Advance payment with Kate Ross
Today during coffee breaks



CLIC re-baselining



Requirement, following the discussion at January 2015 CLIC workshop:

- First stage: $E_{\text{cms}}=380 \text{ GeV}$, $L=1.5 \times 10^{34} \text{ cm}^{-2} \text{ s}^{-1}$, $L_{0.01}/L > 0.6$
- Second stage: $E_{\text{cms}} \sim 1.5 \text{ TeV}$,
- Final stage: $E_{\text{cms}}=3 \text{ TeV}$, $L_{0.01}=2 \times 10^{34} \text{ cm}^{-2} \text{ s}^{-1}$, $L_{0.01}/L > 0.3$

Optimised solution, by Daniel Schulte et al.

- Optimised acc. structures for 380 GeV (which are also compatible with klystron powering) at 72 MV/m.
- 4 deceleration sectors for 380 GeV
- Add different structures when going to high energies => good solution exists close to the current R&D on “CLIC_G” structures (with small change in length and aperture) at 100 MV/m.
- Adding 21 sectors yields 3.01 TeV.

CLIC parameters at 380 GeV



parameter	unit	value
N	10^9	5.2
n_b		352
τ_{RF}	ns	244
f_{rep}	Hz	50
G	MV/m	72
ϵ_x/ϵ_y	$\mu\text{m}/\text{nm}$	0.95/30
σ_x/σ_y	nm/nm	149/2.9
σ_z	μm	70
L_{total}	$10^{34}\text{cm}^{-2}\text{s}^{-1}$	1.5
$L_{0.01}$	$10^{34}\text{cm}^{-2}\text{s}^{-1}$	0.9
n_γ		1.5

(emittances at the IP)

CLIC re-baselining status



Assumptions for annual running:

- **CDR** => based on 200 days/year at 50% efficiency (accelerator + data taking combined) => 0.86×10^7 seconds per year
- **New assumption** => 250 days/year (8 months) at 50% efficiency (accelerator + data taking combined) => 1.08×10^7 seconds per year
=> => **may require some scaling of our benchmarking results** ←
($\sim 0.6 \text{ ab}^{-1}$, $\sim 1.6 \text{ ab}^{-1}$, 2.4 ab^{-1})

Editing of re-baselining document has started

- Expect a **first full draft by end July 2015**
- Physics part based on CDR, CLIC Snowmass paper and CLICdp Higgs paper
=> => **hope to complement with more info on top couplings** ←

Enjoy the meeting !