GENERAL INFORMATION

Frank Zimmermann

229th FCC-ee Accelerator Design Meeting
18 September 2026

228th FCC-ee accelerator design meeting

10:30 AM → 10:40 AM **General Information**

Speaker: Frank Zimmermann (CERN)

10:40 AM → 11:05 AM **Xsuite Imperfection Model and Corrections with Beam–Beam Effects**

Speaker: Lara Sievert (epfl)

2026-08-20_Accel... 2026-08-20_Accel...

11:05 AM → 11:30 AM **Enhanced arc tunability and increased dipole filling ratio**

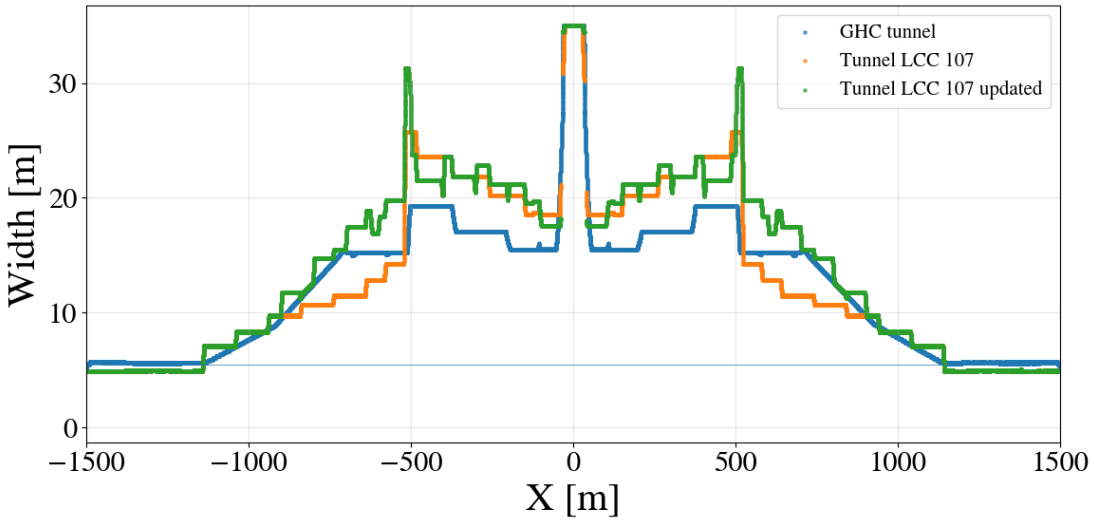
Speaker: Dr Pantaleo Raimondi (Fermi National Accelerator Lab. (US))

LCC ARC sextupol... LCC ARC sextupol... LCC ARC sextupol...

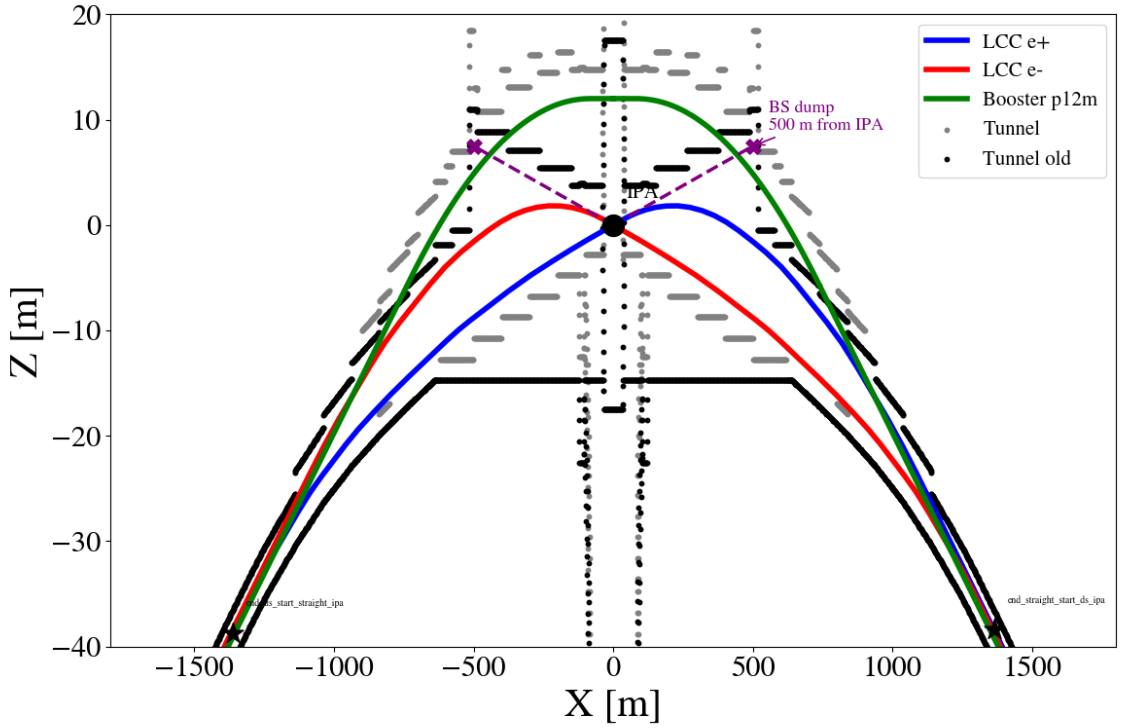
LCC lattice, booster outside in IPs and inside in arcs

- Booster IP offset: +12 m
- Booster arc offset: -0.57 m

It seems that CE excavation volume would be even higher in this option



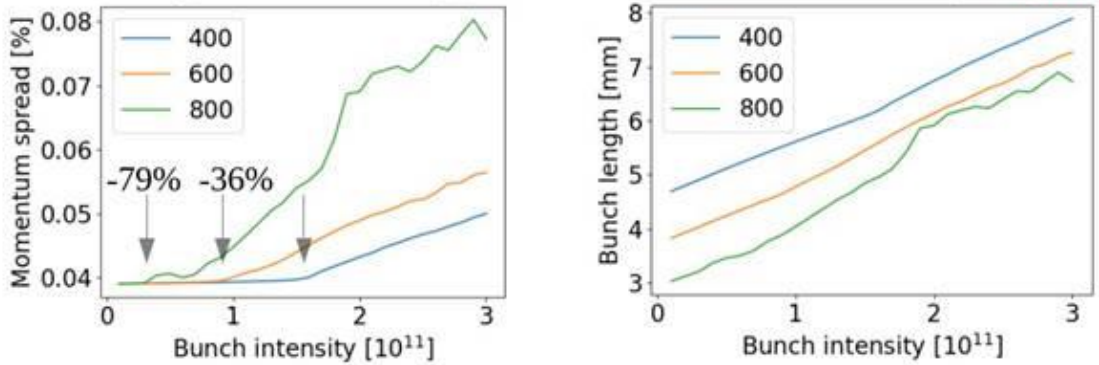
First attempt of adapting CE cross sections ourselves



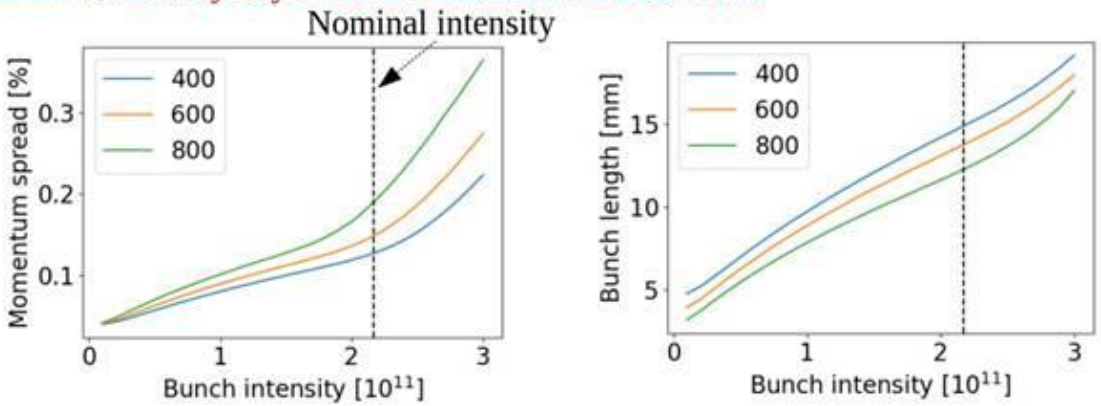
Sofia Kostoglou, Hannes Bartosik

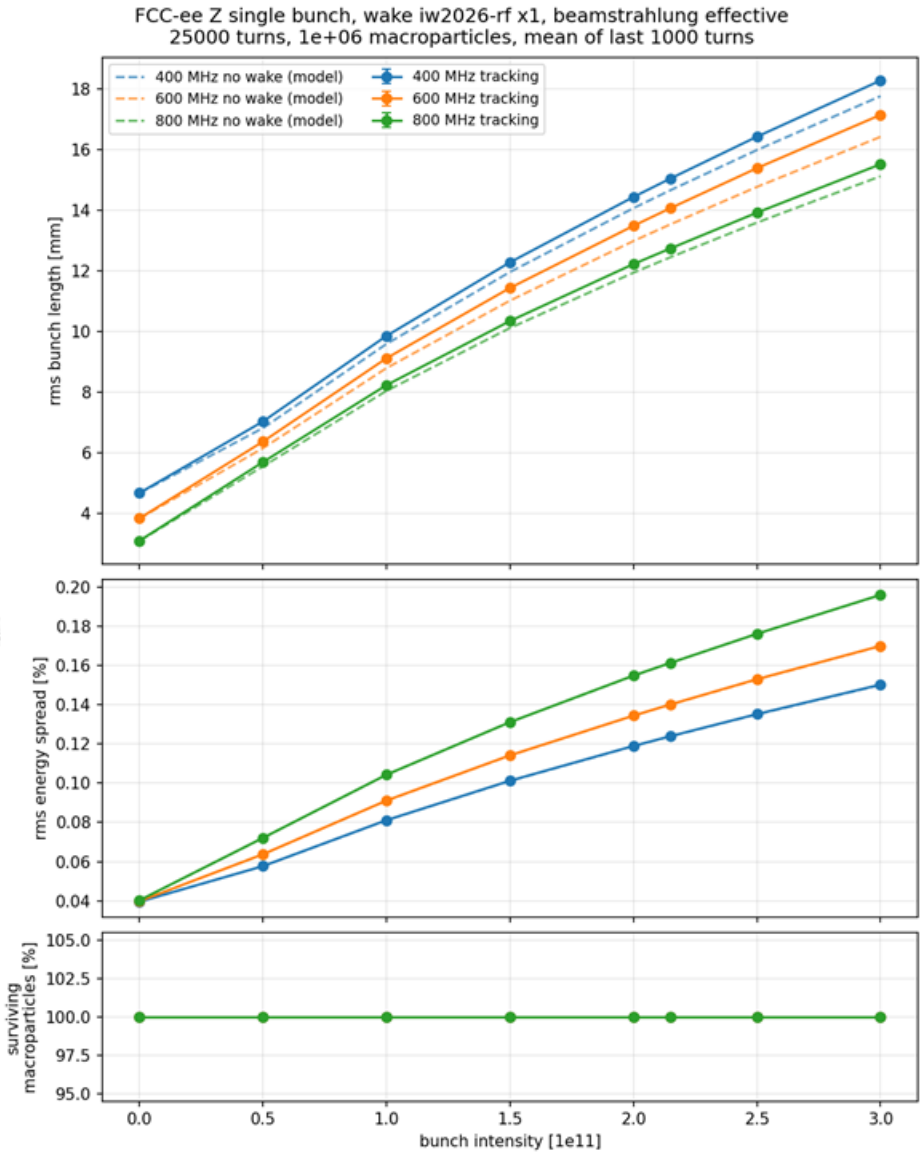
Microwave instability with 800 MHz RF or not ?

- Without beamstrahlung (i.e. short bunch length): The onset of the microwave instability is **significantly reduced**



- With beamstrahlung the nominal intensity is close to the microwave instability threshold with 400MHz and 600MHz but **clearly beyond the threshold with 800MHz.**





Xavier Buffat

Ivan Karpov

Official FCC pillar acronyms
EDMS #3506027

- Accelerator Technical Systems → TSY
- Civil Engineering → CE
- Collider and Booster Design → CBD
- Injectors → INJ
- Physics, Experiments and Detectors → PED
- Scheduling, Planning and Resources → SPR
- Systems Engineering and Integration → SEI
- Technical Infrastructures → TIN
- Territorial Implementation → TIM

SLAC workshops

INJECTORS AND BEAM PHYSICS FOR FUTURE ACCELERATORS WORKSHOP

8-11 September 2026

in person, 106 participants

https://indico.slac.stanford.edu/event/10213/

14-15 September 2026

mostly in-person with some remotes, 82 participants

https://indico.slac.stanford.edu/event/10540/

US HFCC-ACC Program

Worked with contacts supplied by FCC leadership to develop and prioritize program

- FY26 funding is $500k and told to expect $500k / yr in FY27/FY28
  - Leverage other funding sources, e.g. GARD, LDRD, US-Japan, ….
- Selected program is well aligned with FCC-ee and US strengths
  - SRF technology, Beam-Physics, MDI

Building collaborations and establishing relationships

Topic	Lead Investigator	Lead Lab	Request	Funding
800 MHz SRF CM	Kellen McGee	FNAL, et al	$1305k	250k
FCC-ee Beam-Physics and SuperKEKB	Ji Qiang / Chad Mitchell	LBNL, et al	$1100k	100k
Luminosity measurement systematics	Spencer Gessner	SLAC, et al	$750k	50k
MDI CM Engineering	John Seeman	SLAC, et al	$250k	50k

visit of the FACET II tunnel

Set up allows measuring both scattered e^- and photon from laser Compton collisions

Benchmarking for FCC-ee polarimeter ? Laser wire ? Laser collimation ? Laser based intensity control ?

today's agenda

1:30 PM → 1:40 PM **General Information**

Speaker: Frank Zimmermann (CERN)

1:40 PM → 2:05 PM **Considerations on booster with 1.3 GHz RF**

Speaker: Ivan Karpov (CERN)

2:05 PM → 2:25 PM **Frequency analysis of injection losses for SuperKEKB**

Speaker: Takahiro Nemoto