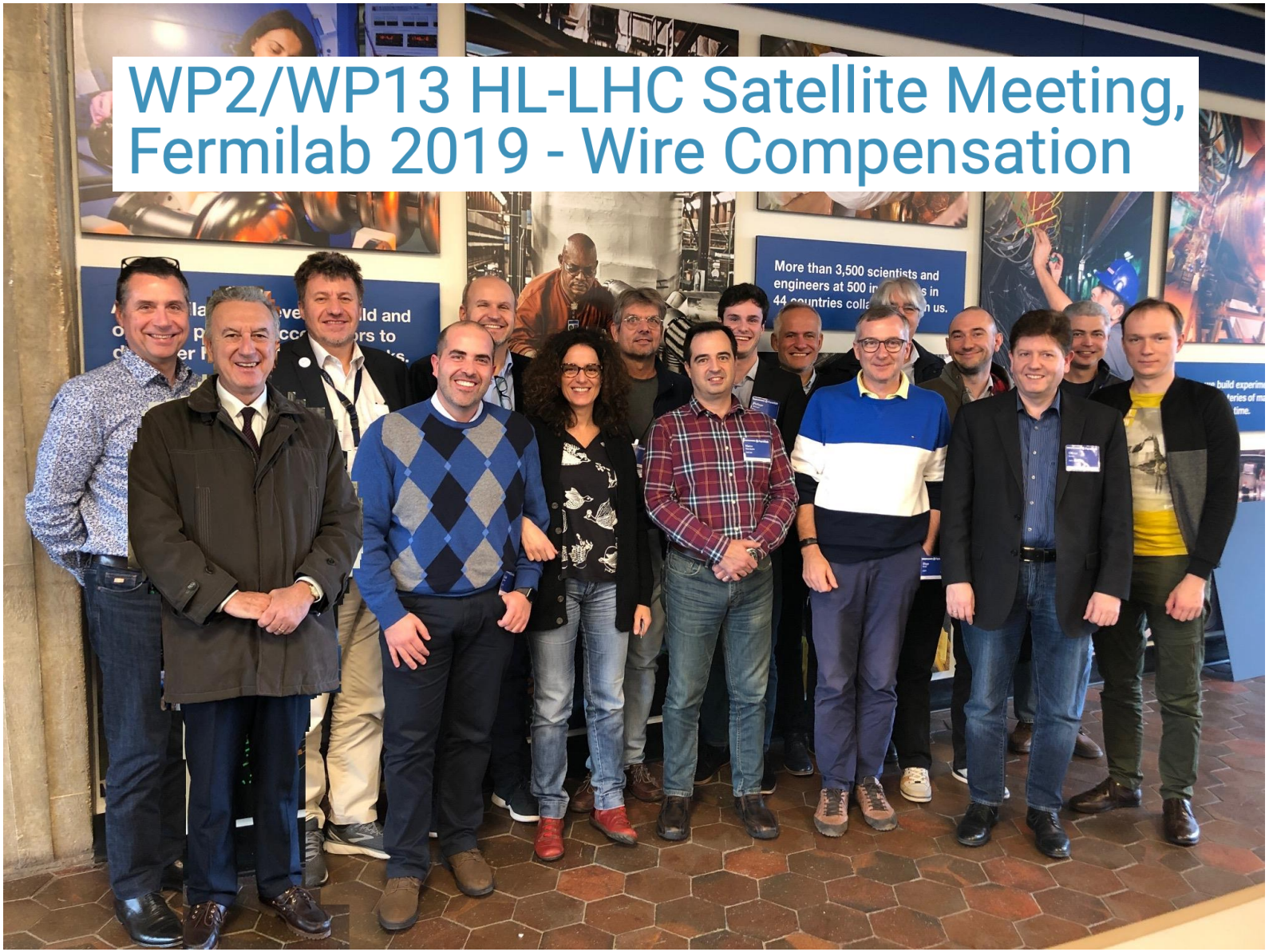

CERN

Welcome to the WP2/WP13 HL-LHC Satellite Meeting, on Long-Range Beam-Beam Wire compensation

Y. Papaphilippou

Reminder: BBLR wire meeting 2019

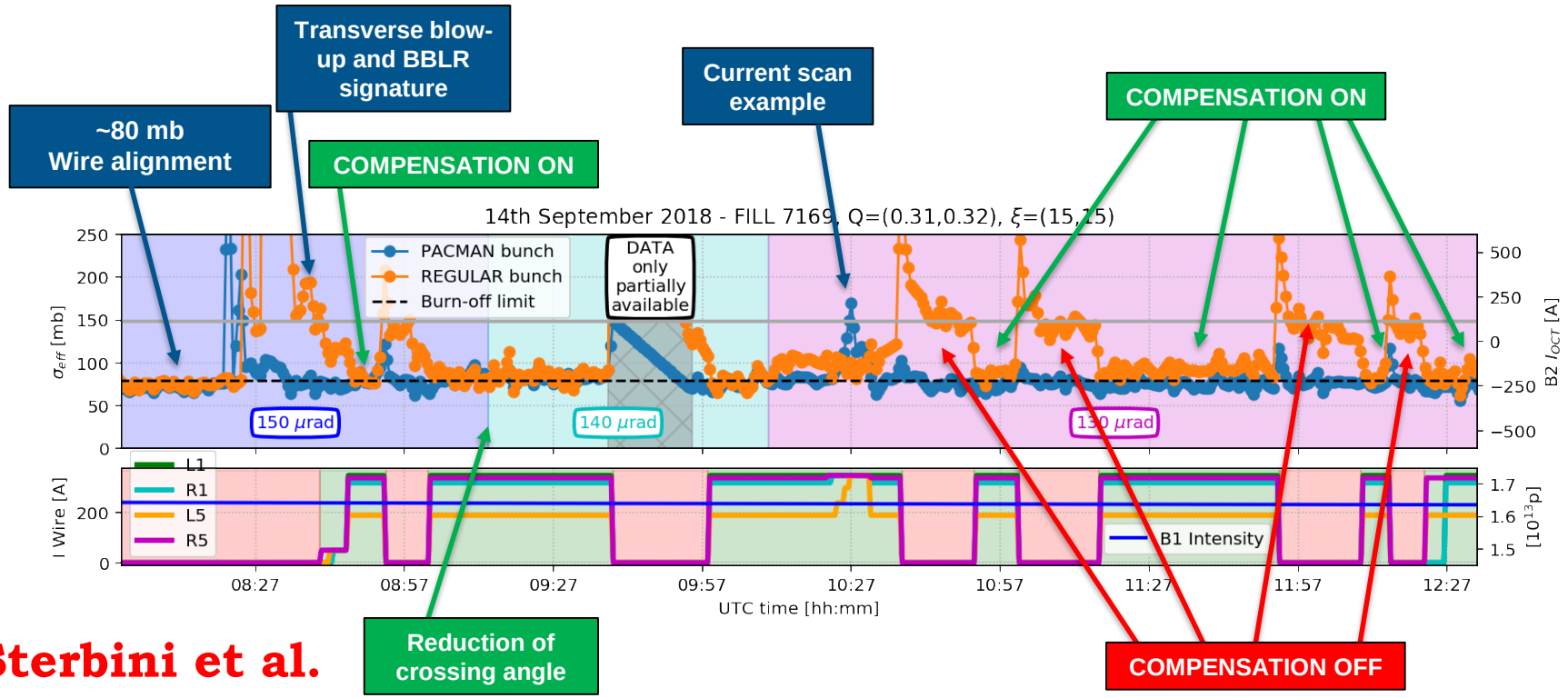


Reminder: BBLR wire meeting 2019

Scope:

- Review of Run2 experimental results

Low-Intensity experiment



G. Sterbini et al.

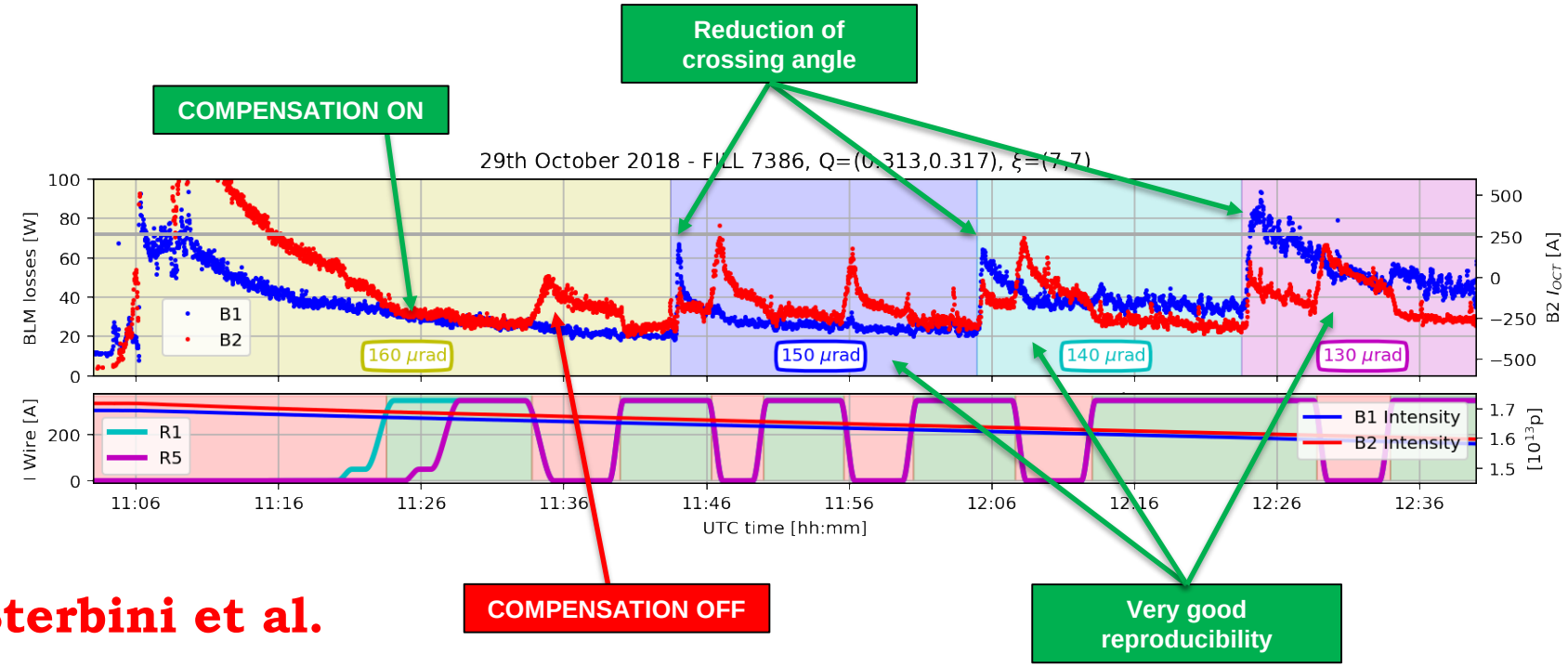
- **Almost full compensation, even at reduced crossing angle, for regular bunch whereas head-on bunch not degraded.**

Reminder: BBLR wire meeting 2019

Scope:

- Review of Run2 experimental results

High intensity experiment (operational conditions)



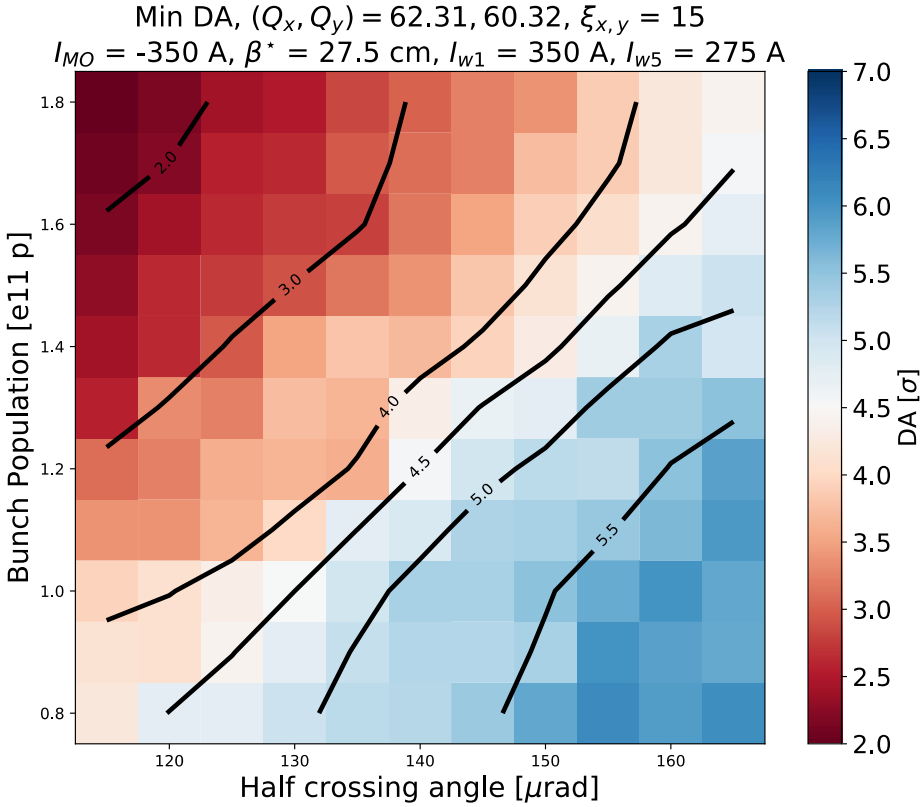
G. Sterbini et al.

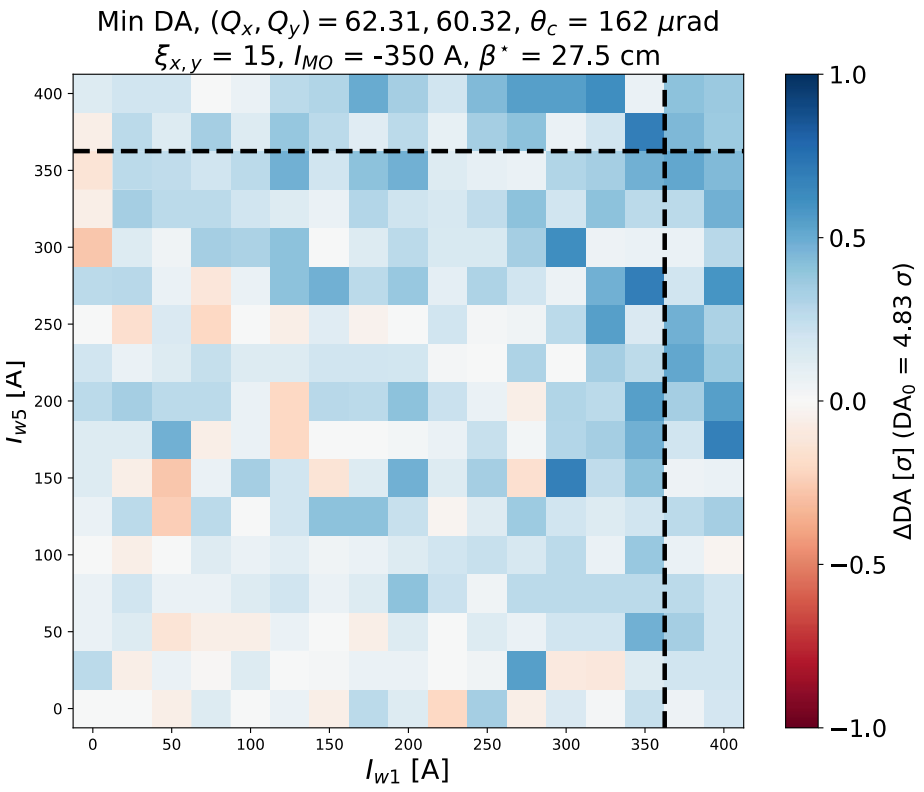
- **Compensation provides a reduction of B2 losses of ~20%.**

Reminder: BBLR wire meeting 2019

Scope:

- Review simulation results for Run3





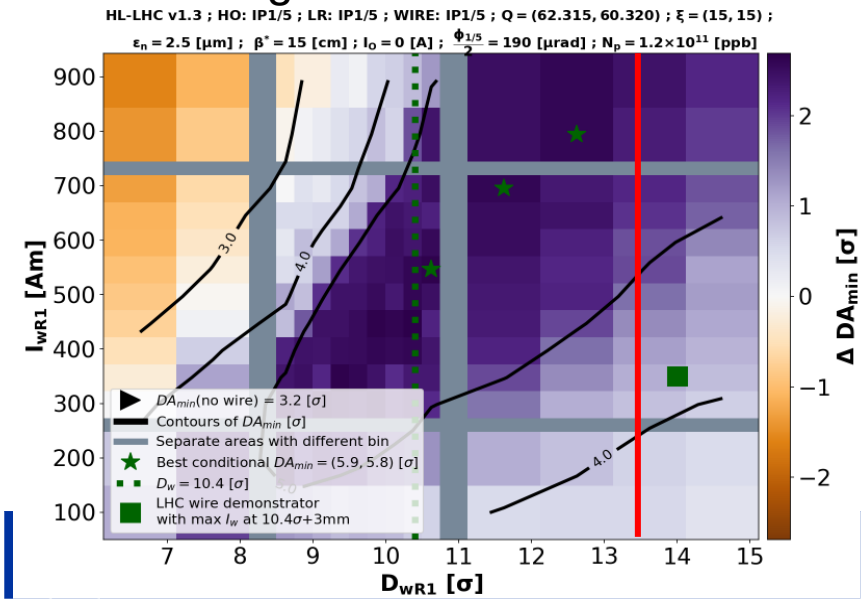
A. Poyet et al.

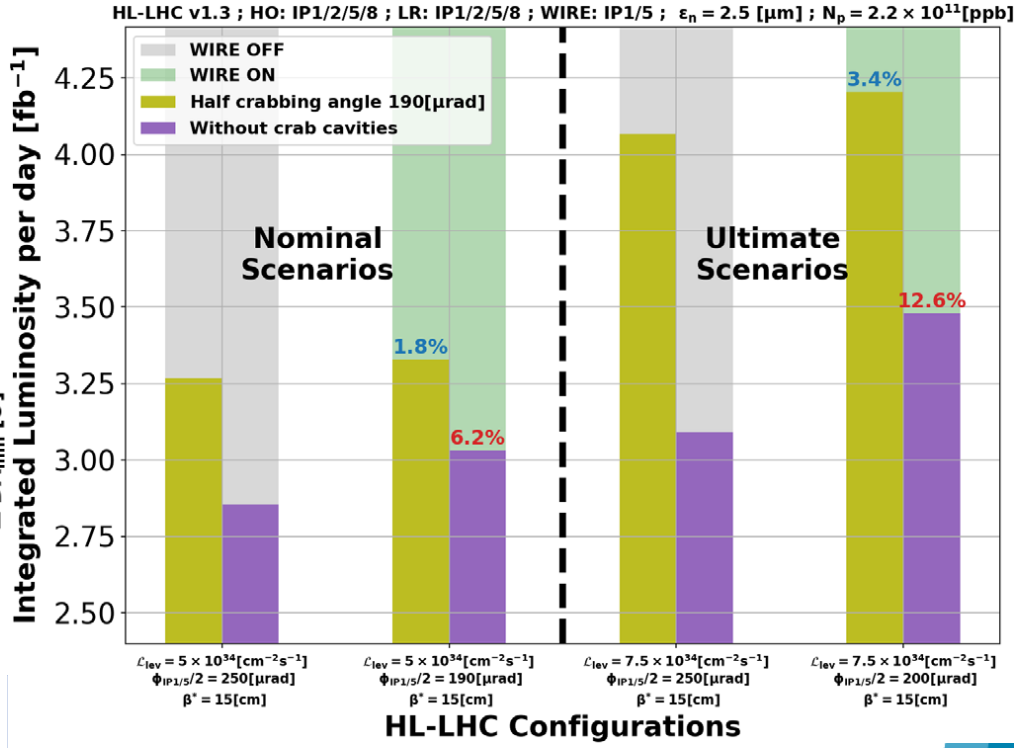
Reminder: BBLR wire meeting 2019

Scope:

- Predictions for HL-LHC performance

- At the **end of the luminosity leveling, the DC wires are mandatory and can guarantee $DA_{min} \approx 6\,\sigma$** with different wire conf gurations with $D_w > 10.4\,\sigma$.



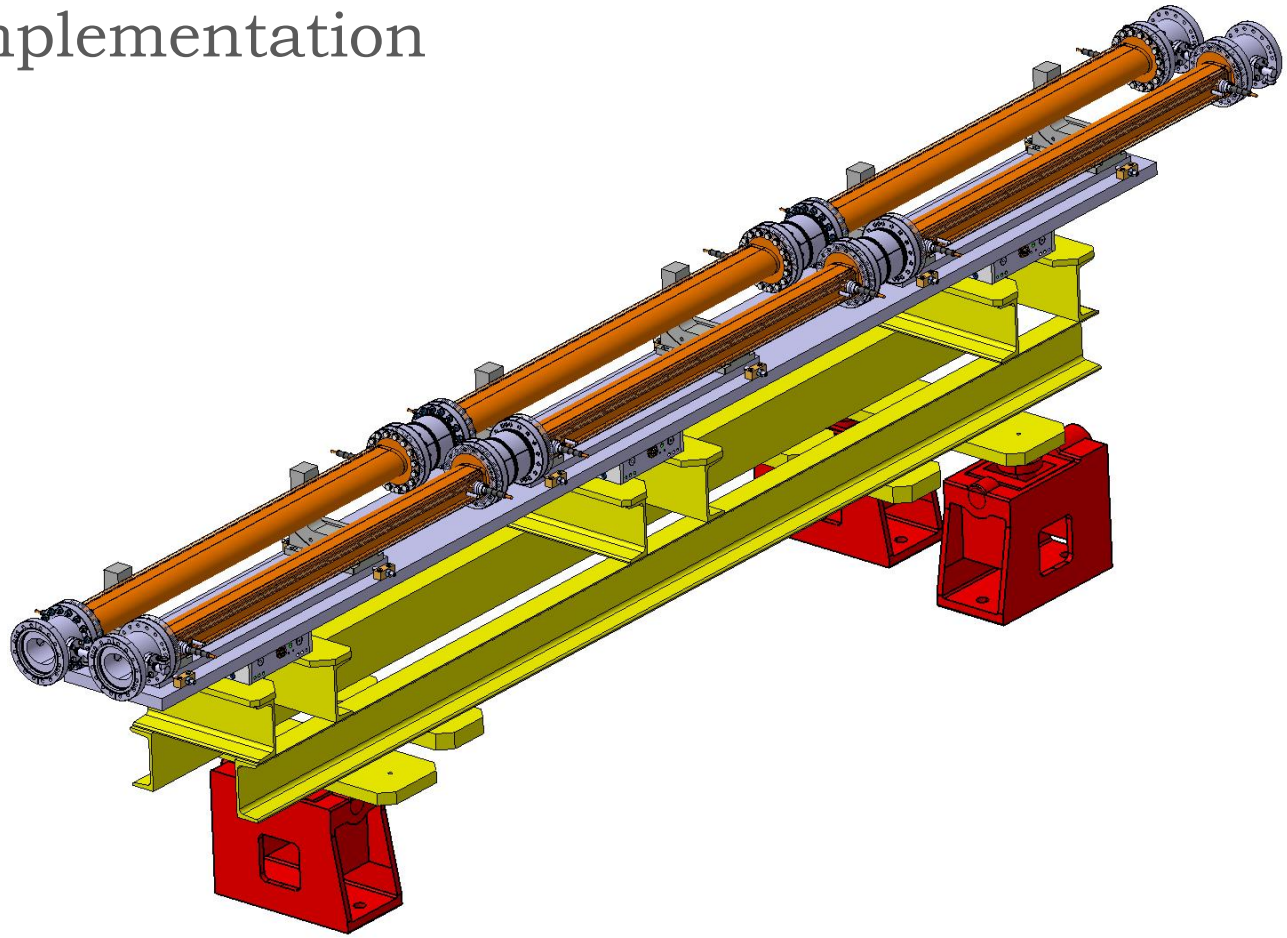


K. Skoufaris et al.

Reminder: BBLR wire meeting 2019

Scope:

- First ideas for wire hard-ware design and implementation



A. Beltarelli et al.

Reminder: BBLR wire meeting 2019

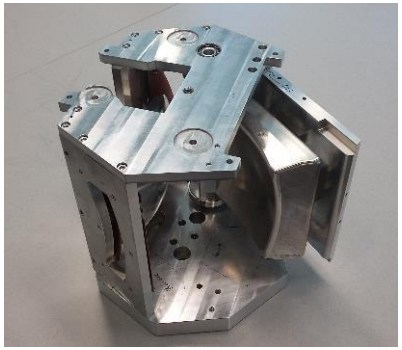
Scope:

- Strengthening collaboration between TRIUMF and CERN

Expertise in beam transport and accelerator systems
Beam line engineering physics group (M. Marchetto)

O. Kerster et al.

- Beam optics design
- Hardware design, engineering and installation of electrostatic and magnetic beam line systems
- OPERA® Elektra calculation for electric field
- Custom feedthrough developed in collaboration with vender
- UHV assembly procedure



Timeline (2019)

- **Experimental verification** achieved with demonstrator (2016-2018)
- **Simulations** proved potential at present LHC but also for HL-LHC, with a **solid DC wire solution** (2017-2019)
  - Refining flat optics operational scenario (2020) -> (2023)
- **Wire operation** during **run3** will clarify operational and machine protection issues (2021-2023) -> (2022-2025)
- **Hard-ware design** and short prototype HW tests for HL-LHC (2020)
- **Technical review** (including budget) for using wire compensation in the HL-LHC era (2020) -> (Q1 2023)
- Prepare **locations** for integration (during LS3)
- Wire **installation** and **operation for HL-LHC** (during Run4)

Timeline (2019)

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- **Wi** ...al and ma... 2025)
- **Ha** ...for HL-LH...
- **Technical review** (including budget) for using wire compensation in the HL-LHC era (2020) -> (Q1 2023)
- Prepare **locations** for integration (during LS3)
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Very limited resources @ CERN, heavily relying to TRIUMF collaborators

BBLR wire meeting 2022

Scope:

- **Run 3** experimental results and numerical simulations
- Predictions for **Run 4**
  - Collimation, impedance, heat-load
- Results of **wire hardware short-model** prototype
  - Integration, schedule
- Framework for future **contributions** of **TRIUMF**
- Prepare **2023 review**

WP2/WP13 HL-LHC Satellite Meeting, Uppsala 2022 - Long-Range Beam-Beam Wire

Welcome	*Yannis Papaphilippou*	
New Consistorium room, Uppsala University		08:45 - 09:00
BBCW results during Run 3 operation	*Philippe Belanger*	
New Consistorium room, Uppsala University		09:00 - 09:30
BBCW collimation scenarios for Run 4	*Roderik Bruce*	
New Consistorium room, Uppsala University		09:30 - 09:45
BBCW potentials for Run 4	*Guido Sterbini*	
New Consistorium room, Uppsala University		09:45 - 10:15
Coffee break		
New Consistorium room, Uppsala University		10:15 - 10:45
Present BBWC mechanical design	*Alessandro Bertarelli*	
New Consistorium room, Uppsala University		10:45 - 11:15
Infrastructure/Integration/Schedule constraints	*Adriana Rossi*	
New Consistorium room, Uppsala University		11:15 - 11:35
Impedance and RF heating	*Benoit Salvant*	
New Consistorium room, Uppsala University		11:35 - 12:05
Energy deposition studies	*Marta Sabate Gilarte*	
New Consistorium room, Uppsala University		12:05 - 12:25
Lunch break		
New Consistorium room, Uppsala University		12:25 - 13:30
TRIUMF contribution to the BBLR Compensation Project	*Oliver Kester*	
New Consistorium room, Uppsala University		13:30 - 14:00
Magnetic field modelling of the wire	*Marco Marchetto*	
New Consistorium room, Uppsala University		14:00 - 14:30
Discussion		
New Consistorium room, Uppsala University		14:30 - 15:00

Thanks in particular to
Cecile Noels, Adriana Rossi and
Guido Sterbini for the organisation

Let's get WIRED

Thanks in particular to Cecile Noels, Adriana Rossi and Guido Sterbini for the organisation

HiLumi HL-LHC PROJECT

CERN