
CERN

Wires Simulations for MD1

A. Poyet with the incredible help of N. Karastathis and K. Skoufaris

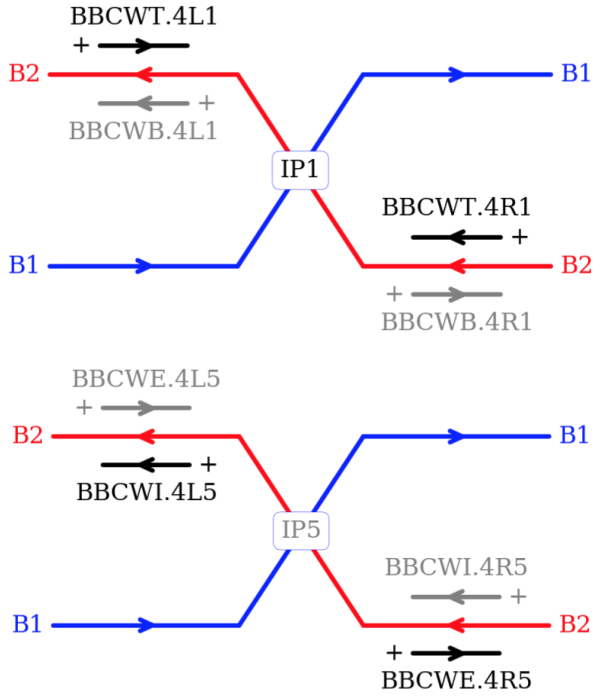
Simulations parameters (MD1)

- LR (19) + HO (1) in both IP1/IP5
- Bunch intensity Nb = 1.15e11 p/bunch
- Half crossing angle: 150 urad
- Collimators **jaws** at 5.5 sigmas
- Octupoles MO at 0A
- High chromaticity: Q'=15
- Unloaded tune Qx0,Qy0 = (62.31,60.32)
- BBLR + HO loaded tune Qx, Qy = (62.3022, 60.3125)
  - Target for the matching after powering the wires
- Normalised emittance 2.2 um
- **Real s-position of the 4 wires**

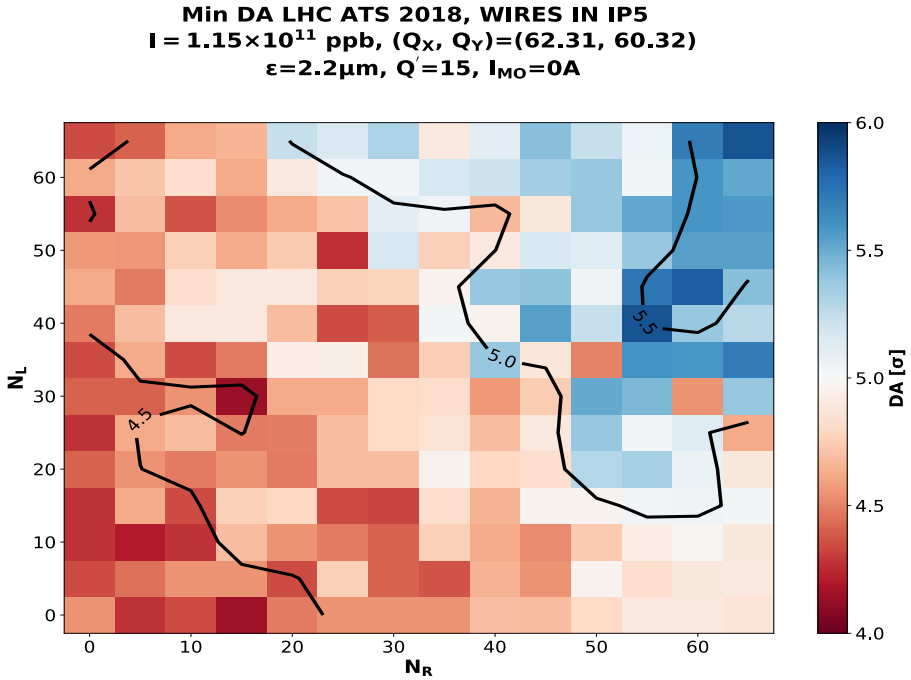
Ouups, little problem…

Wire	Plane	Wire-beam distance [mm]
R1	V	+7.42
L1	V	-7.41
R5	H	+8.24
L5	H	-7.15

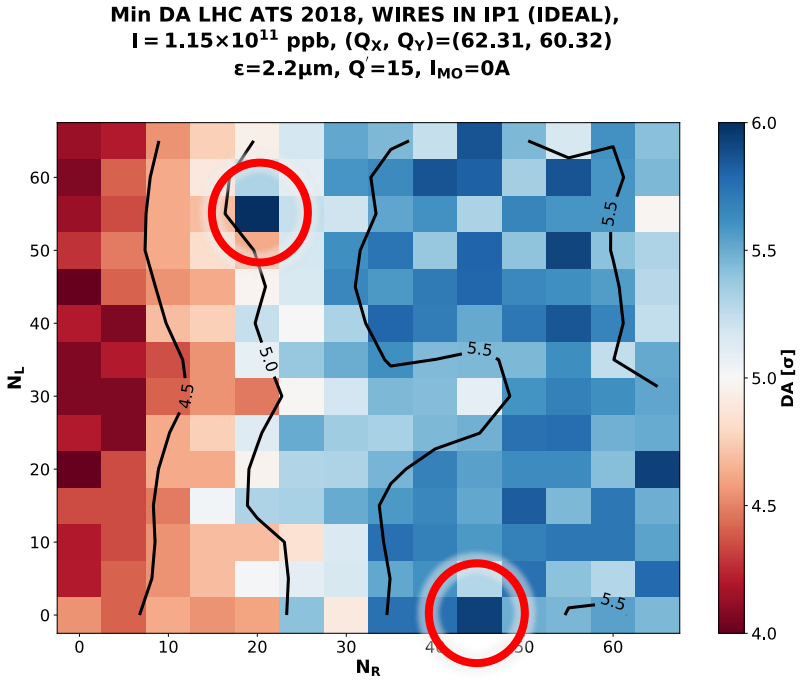
B2 values… Opposite sign for B1. But….



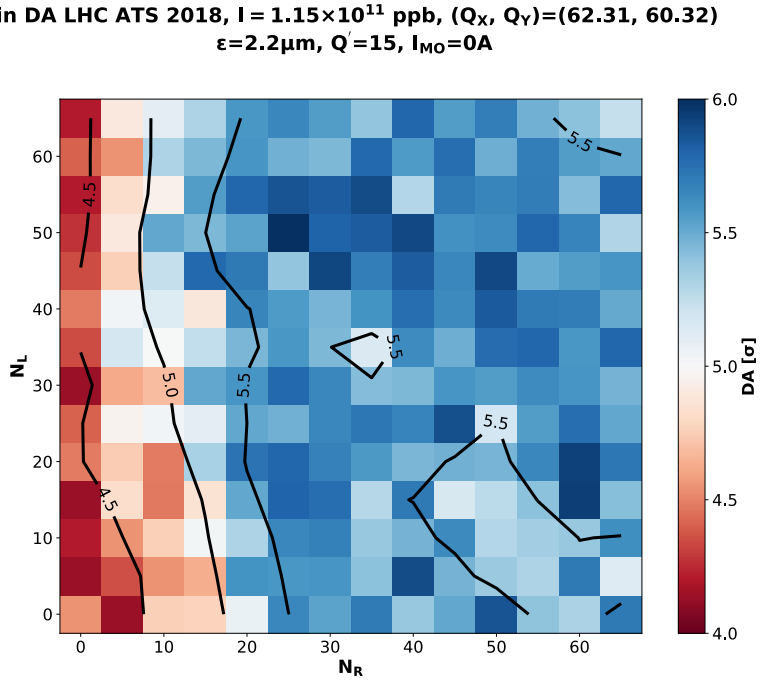
Powering in IP5 only (2017)



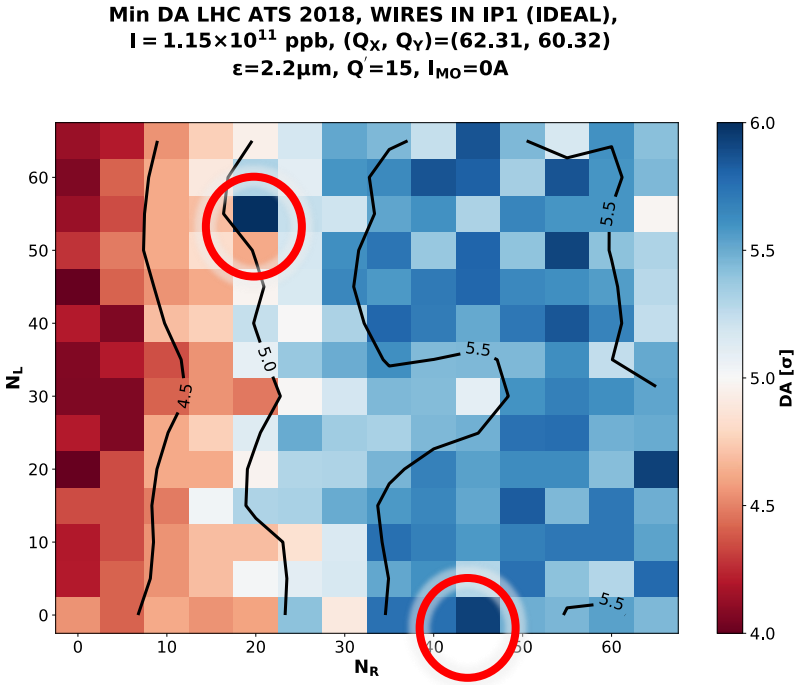
Powering in IP1 only

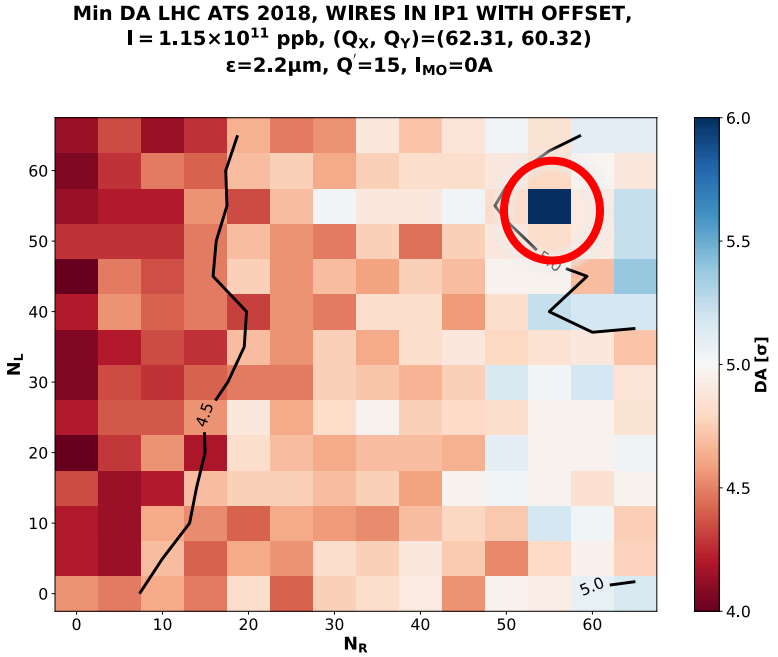


Powering the four wires



Effect of the H offset of the R1 wire





To be continued

- On going, right now: scan on the wire R1 offset (with the good transverse positions……) and its current.
- Relaunch the other simulations for MD1 situation.
- Effect of the chromaticity? Of the octupole?
- Obj: find the good **criteria** to link DA and lifetime: detuning? RDTs?
- Replace the matching section (with wires on) by a trim of Q4/Q5.
- All suggestions are more than welcome ☺