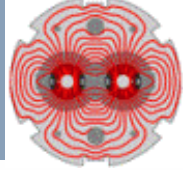


Energy greater than 3.5TeV:

- ⊗ Only **minor impact on radiation levels**, thus not an issue from the R2E point-of-view

Impact of 2012 operation

- ⊗ Will lead to a **delay of R2E mitigation measures** (shielding/relocation)
- ⊗ **Impact on operation not to be excluded**
- ⊗ **Risk of destructive failures**
- ⊗ Failure rate expected to be (just) acceptable

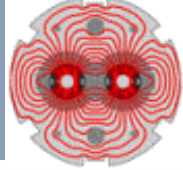


What We Promised To Do...

- ④ Preparation of **shielding & relocation** measures (ready to go as from **2012 onwards**)
- ④ 2011 experience together with detailed monitoring & scheduled radiation tests (*e.g.*, full power-converters) will allow us a **further optimization** step
- ④ **Monitoring** and preparation of **patch solutions**

Our Strategy:

- ④ **Anticipate problems** whenever possible (WIC relocation during technical stop)
- ④ Aim to be **ready for 2012** shutdown in any case
- ④ **Optimize the long-term solution (H4IRRAD crucial)**



To be kept in mind...

Tests with (LHC) beam

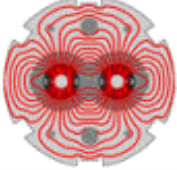
- ⊙ Field-calibration (for detectors) measurements:
 - ⊙ quench-test location would be ideal for additional loss/radiation-field studies
 - ⊙ TCDI near UJ87 would be an additional good spot

Scrubbing & Beam-Gas

- ⊙ (So far) very low radiation levels in most of the ARC/DS locations (only specific loss locations [including some surprises] are concerned already $\sim 1\text{Gy}$ in some cases!)
- ⊙ Minor effect on shielded areas
- ⊙ Tunnel equipment will be exposed

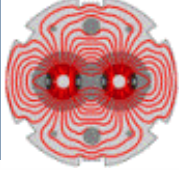
Ion-Operation

- ⊙ One month of ions is in some locations worse than one year of nominal! -> change of B2 settings (Ralph)



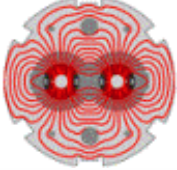
1) Prepare as much improvement as possible for 2011/12 shutdown.

- ⊙ This requires a frozen layout for all points and the input from radiation tests/operation (to select what equipment) -> work will be anticipated as much as possible (one example: the WIC crate in P8 will most likely be moved during the next technical stop), not much more can be said during the coming months



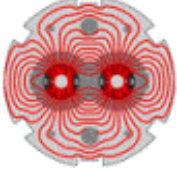
2) Change B2 dispersion (IR7L): shorten region with cleaning losses into DS (ions).

- Ⓜ No news from Ralph [last statement in Chamonix was that it's rather easy to be done], not urgent as for ion run



3) Continue efforts to reduce uncertainty in equipment sensitivity.

- ④ H4IRRAD tests in preparation (Power-Converters, EN/EL equipment, GTOs) -> **IMPORTANT: risk of getting the facility not ready in time, needs high priority support!** (I'm worried!); CNRAD: tests will start soon (installation of first round of equipment next week) -> on the list: PCs, Cryo, QPS, DerivFIP, FipDiag, LED (BLM: new chambers)



4) Perform beam tests (quench test location + injection region) to improve radiation field calibration.

@ on the list for OP, will be re-discussed this Thursday with Mirko (should happen during beam setup period), shouldn't be a big problem!