# **LHC Collimation Review 2011**

# **Report of Contributions**

Introduction to LHC collimation

Contribution ID: 0

Type: not specified

#### Introduction to LHC collimation

Tuesday 14 June 2011 09:35 (20 minutes)

Collimation system description: multi-stage cleaning, different planes, betatron and momentum. Definition of cleaning efficiency. Introduction quench limit. Hierarchy. Limiting physics processes: single-diffractive p scattering, ion fragmentation, ... Comments on hollow e-beam scrapers.

Presenter: Dr REDAELLI, Stefano (CERN)

Collimation setup and performance

Contribution ID: 1

Type: not specified

#### **Collimation setup and performance**

Tuesday 14 June 2011 10:00 (20 minutes)

How is it adjusted? How does it perform in LHC (loss maps: measurement and simulation). MD results at 3.5TeV and performance reach at 7TeV. Losses in luminosity production (dispersion suppressors). Measurement protons vs ions. Minimum beam lifetime. First SPS results BPM's in jaws.

**Presenter:** WOLLMANN, Daniel (CERN)

Collimation margins and beta\*

Contribution ID: 2

Type: not specified

### Collimation margins and beta\*

Tuesday 14 June 2011 11:10 (15 minutes)

Stability of LHC machine (orbit, beta). Required margins for collimation setup. Connection collimation to beta. *What beta* can be achieved? Origins of limitations: protection condition, infrequent collimation setups, machine drifts.

Presenter: BRUCE, Roderik (CERN)

Beam-machine interaction: simul ...

Contribution ID: 3

Type: not specified

#### **Beam-machine interaction: simulation benchmarking vs first LHC experience**

*Tuesday 14 June 2011 11:30 (15 minutes)* 

FLUKA models and predictions. Comparison between measurements and simulations. Safety margins.

Presenter: Mr LECHNER, Anton (Atomic Institute of the Austrian Universities, TU Vienna)

Collimator design: phase 1 and b  $\,\cdots\,$ 

Contribution ID: 4

Type: not specified

### Collimator design: phase 1 and beyond

*Tuesday 14 June 2011 11:50 (20 minutes)* 

Short description phase 1 design. Second generation collimators. Improved jaw materials. Collimators for cryogenic regions (warm/cold solution).

Presenter: DALLOCCHIO, Alessandro (CERN)

Collimation project upgrade plan ···

Contribution ID: 5

Type: not specified

### Collimation project upgrade plan and questions

*Tuesday 14 June 2011 14:05 (25 minutes)* 

Outline of collimation upgrade plan. What is planned when and why? What are the questions arising for this upgrade plan?

Presenter: Dr ASSMANN, Ralph (CERN)

Warm upgrade IR3

Contribution ID: 6

Type: not specified

# Warm upgrade IR3

Work in the long-straight section of IR3. Implementation of combined betatron/momentum cleaning. Work involved.

**Presenter:** ABERLE, Oliver (CERN)

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Dispersion-suppressor upgrade IR3

Contribution ID: 7

Type: not specified

# **Dispersion-suppressor upgrade IR3**

*Tuesday 14 June 2011 14:35 (15 minutes)* 

Foreseen work in IR3 for first long shutdown? Short description. Planning aspects.

Presenter: PARMA, Vittorio (CERN)

Outcome Risk Review for IR3 Work

Contribution ID: 8

Type: not specified

#### **Outcome Risk Review for IR3 Work**

Tuesday 14 June 2011 16:30 (20 minutes)

Conclusions from May review in EN/TE departments. Technical feasibility? Major risks? Any show-stoppers identified?

Presenter: LEBRUN, Philippe (CERN)

Proton beam performance with a  $\cdots$ 

Contribution ID: 9

Type: not specified

# Proton beam performance with and without IR3 upgrade

Tuesday 14 June 2011 14:55 (15 minutes)

What is lost when not doing the IR3 upgrade? Gain from DS collimators. Performance reach without (see also morning presentation) and with dispersion suppressor collimators for protons.

Presenter: ROSSI, Adriana (CERN)

Expectations from Review

Contribution ID: 10

Type: not specified

### **Expectations from Review**

*Tuesday 14 June 2011 14:00 (5 minutes)* 

**Presenter:** MYERS, Steve (CERN)

Welcome

Contribution ID: 11

Type: not specified

#### Welcome

*Tuesday 14 June 2011 09:30 (5 minutes)* 

Presenter: Dr ASSMANN, Ralph Wolfgang (CERN)

Collimation remote handling

Contribution ID: 12

Type: not specified

### **Collimation remote handling**

*Tuesday 14 June 2011 12:15 (10 minutes)* 

Highlights from work for collimation remote handling and remote survey. Plans.

**Presenter:** KERSHAW, Keith (CERN)

Ion beam performance with and …

Contribution ID: 13

Type: not specified

# Ion beam performance with and without IR3 upgrade

Tuesday 14 June 2011 15:15 (15 minutes)

Ion performance reach without and with dispersion-suppressor collimators in IR3. Other ion limitations (IR2, ...). Possible impact from delay of IR3 work on IR2 upgrade of dispersion suppressors.

**Presenter:** BELLODI, Giulia (CERN)

Energy deposition with and with ...

Contribution ID: 14

Type: not specified

#### Energy deposition with and without IR3 upgrade

*Tuesday 14 June 2011 15:50 (15 minutes)* 

Predicted energy deposition with and without IR3 dispersion suppressor collimators. Gain from collimators. Performance reach from comparing peak heat deposition with quench limit. Comparison with MD results.

Presenter: Dr BOCCONE, Vittorio (CERN)

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Impedance without IR3 upgrade

Contribution ID: 15

Type: not specified

#### Impedance without IR3 upgrade

Tuesday 14 June 2011 16:10 (15 minutes)

Impedance from tight collimation settings as achieved in MD. Will the beams be stable with impedance, taking into account stabilization from transverse damper and octupoles?

Presenter: MOUNET, Nicolas (Ecole Polytechnique Federale de Lausanne (EPFL)-Unknown-Unknown)

Activation issues in dispersion su  $\cdots$ 

Contribution ID: 16

Type: not specified

#### Activation issues in dispersion suppressors

*Tuesday 14 June 2011 16:55 (15 minutes)* 

Expected activation levels. Are additional limits expected on work in dispersion suppressors during later shutdowns?

Presenter: ROESLER, Stefan (CERN)

Radiation damage in dispersion-...

Contribution ID: 17

Type: not specified

#### Radiation damage in dispersion-suppressor magnets

*Tuesday 14 June 2011 17:15 (15 minutes)* 

Can the radiation dose on unprotected magnets in the dispersion suppressors be accepted? What is the radiation hardness and can unacceptable damage to magnets be excluded, for protons and ions?

Presenter: Dr TOMMASINI, Davide (CERN)

Radiation to electronics issues

Contribution ID: 18

Type: not specified

## **Radiation to electronics issues**

**Presenter:** BRUGGER, Markus (CERN)

Radiation to electronics

Contribution ID: 19

Type: not specified

### **Radiation to electronics**

Tuesday 14 June 2011 10:50 (15 minutes)

Issues with radiation to electronics in LHC, with focus on collimation insertions. IR7 versus IR3 sensitivity. Benefit of moving losses from IR7 to IR3.

Presenter: BRUGGER, Markus (CERN)

IR3 warm upgrade

Contribution ID: 20

Type: not specified

# IR3 warm upgrade

**Presenter:** ABERLE, Oliver (CERN)