

Closing Remarks

Programme and Sessions

- Beam Operations and modelling
- Beam Diagnostics
- Ramp, squeeze, optics lessons from physics
- Machine Protection
- Controls and Operational Specs
- 2010 Operations

A balanced and useful programme

General Remarks

- An excellent initiative as a complement to the “hardware” session of Chamonix 2010
- Excellent instructive and detailed talks
 - Given by the younger members of the LHC team
- Lots of important issues raised and discussed
- Organizers have set a new standard for workshop organization (..and possibly expense!)

Some General Comments

- Identification of many needed technical improvements cf 2009
 - Being or to be implemented
- Transition from operating a safe beam (2009) to an unsafe beam (2010)
- In 2009 some “short-cuts” were taken (culprits ... me) we got away with it (so CONGRATULATIONS), but we should definitely NOT continue like this in 2010 when we are dealing with unsafe beams

Comments on Machine Protection

- Set-up beam flag
 - “present system not adequate for 2010”
 - Improvements foreseen for 2010 but not all required improvements can be done
- Collimation: big success: but still more work needed

Questions from Machine Protection

- Who approves the path for intensity increase?
- Who takes the responsibility for the safety of the LHC?
- Discuss on safety (procedures or interlocks)
 - Procedures reduce the possibility of human error
 - But relying on procedures is not always safe
 - Tested interlocks is the system used for personnel safety

Additional Questions/Remarks

- What damage can we do with the foreseen intensities in 2010
- Avoid becoming “paranoid” about increasing the intensity “ships are safe in harbours but that is not why they are built,”
- We must avoid the situation where we are stopped by the safety system from protecting the LHC.