

Workshop on Beam-Induced Quenches

Monday 15 September 2014 - Tuesday 16 September 2014

CERN

Session Overview

Monday morning, Welcome Message

(A. Siemko)

Monday morning, Session 1: Operational Experience with Beam Losses and Beam-Induced Quenches

(Chair: A. Siemko, Secretary: M. Sapinski)

In this session the experience with beam-induced quenches in large superconducting accelerators and transfer lines is presented. Topics of interest include: beam loss mechanisms, statistics and analysis of beam-loss events, BLM systems parameters, threshold-setting strategies, and quench-level models as well as damage-level models for transient beam losses in SC magnets.

Monday afternoon, Session 2: Quench Tests at the LHC

(Chair: B. Dehning, Secretary: C. Bracco)

This session is devoted to a series of controlled beam-loss experiments performed in the LHC during Run1. Loss durations ranged from single-turn losses to over 20-s loss duration. The experimental setup is introduced, followed by the main aspects of BIQ analysis: loss pattern estimation, particle shower simulations, and electro-thermal calculations. Analysis results and possible improvements for future experiments are discussed.

Tuesday morning, Session 3: Heat-Transfer R&D

(Chair: B. Bordini, Secretary: G. Willering)

The aim of the session is to present the state of

the art in the study of heat transport from superconducting cables to liquid helium. Numerical models will be discussed, as well as the latest results of experimental work. We aim for a lively discussion on future experimental work to validate numerical models in the highly-relevant millisecond-loss regime (UFO losses in the LHC). Moreover, we want to devote one slot to the conception of an experimental program towards validated damage-levels for fast beam-loss events in superconducting accelerator magnets.

Tuesday afternoon, Session 4: LHC BLM Thresholds for Run 2

(Chair: D. Wollmann, R. Bruce)

The aim of this session is to review the strategy for setting the LHC Beam Loss Monitors Thresholds after the long shutdown. The different involved teams will present a proposal for new BLM thresholds. This will cover losses from U.F.O.-type events, collimation-induced losses during proton and ion operation, losses at the triplets, and injection and dump losses.

Tuesday afternoon, Session 5: Summary Session

(Session Chairs)

Tuesday evening, Session 6: Experimental roadmaps - Informal Brainstorming Continued

Informal round of discussions on the experimental validation of quench and damage levels for transient beam losses in accelerator magnets.