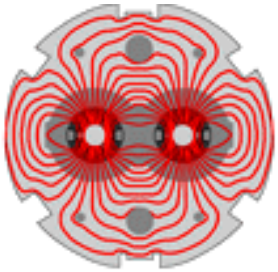

Contribution ID: **51** Type: **not specified**

Insulation vacuum and beam vacuum overpressure release

Tuesday, 3 February 2009 17:00 (25 minutes)

There is evidence that the incident of 19th September caused a high pressure build-up inside the cryostat insulation vacuum which the existing overpressure devices could not contain. As a result, high longitudinal forces acting on the insulation vacuum barriers developed and broke the floor and the floor fixations of the SSS with vacuum barriers. The consequent large longitudinal displacements of the SSS damaged chains of adjacent dipole cryo-magnets. Estimates of the helium mass flow and the pressure build- up experienced in the incident are presented together with the pressure build-up for an even more hazardous event, the Maximum Credible Incident (MCI). The strategy of limiting the maximum pressure by the installation of addition pressure relieve devices is presented and discussed.
Both beam vacuum lines were ruptured during the incident in sector 3-4 giving rise to both mechanical damage and pollution of the system. The sequence, causes and effects of this damage will be briefly reviewed. We will then analyse possible actions that could be taken to minimize the impact of a similar incident on the operation of the LHC.

Presenter: PARMA, Vittorio

Session Classification: Session 04 - Strategy for consolidation to avoid incident and limit collateral damage