



Contribution ID: 3

Type: **invited**

Noise Effects on Stored Beams in a Proton Synchrotron

Tuesday, 11 October 2005 11:40 (20 minutes)

The presentation will start with a few general remarks on a theory of beam motion under noises (inside and beyond RF buckets, non-linearity, stationary and periodically non-stationary noises, drift fluxes, etc). Existing difficulties would be outlined and ways to solve them sketched out. Availability of ready-to-use proven techniques and tools will be commented. Experimental verification of the key noise diffusion issues in the MD runs of U70 PS of IHEP-Protvino (flattening bunches with RF noise gymnastics, stochastic slow extraction) will be reviewed in short. Major emphasis will be put on the problems most applicable to the LHC: specifics of beam noise-driven halation under a non-negligible energy loss due to synchrotron radiation of high-energy protons (diffusion plus or minus drift due to the SR). An attempt to explain (most of) coasting-beam halo phenomenology in the HERA-p ring will be made and projected onto the LHC case.

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Session Classification: Talks Session 2