

# FINAL TRANSVERSE EMITTANCE DUE TO THE E-CLOUD-INDUCED FAST INSTABILITY

E. Métral

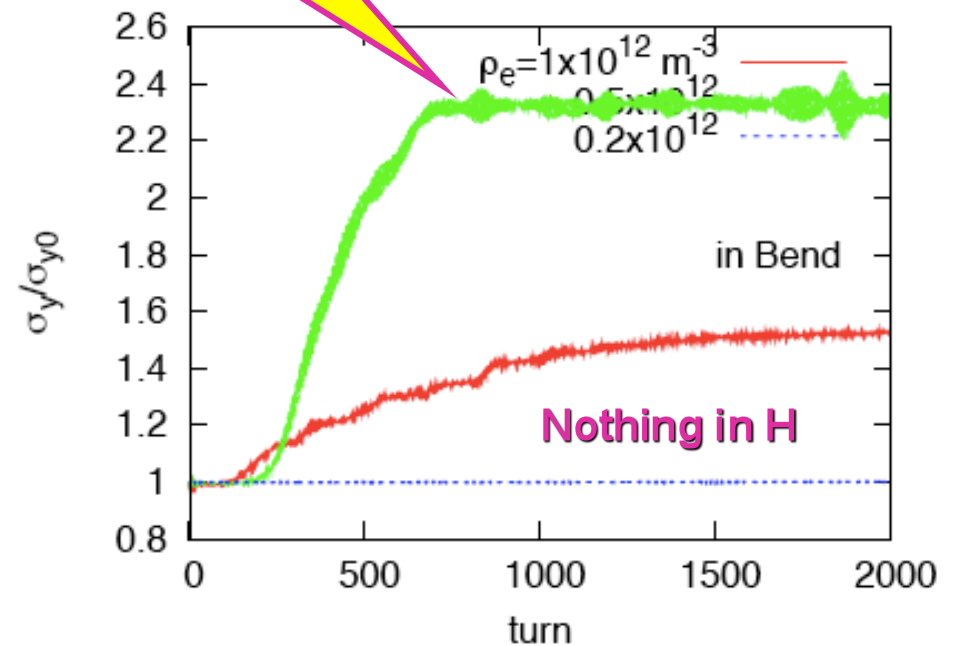
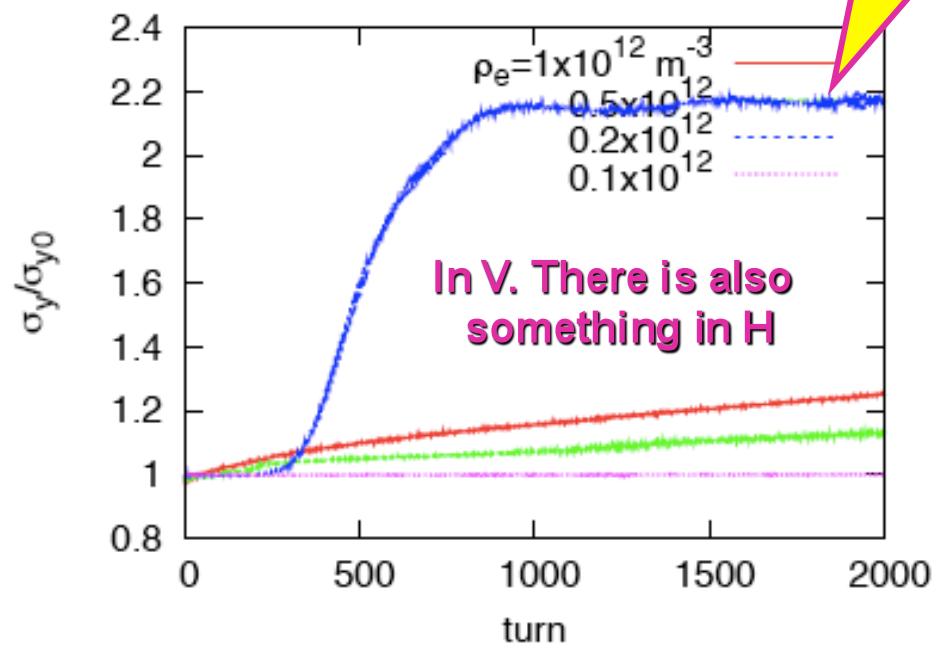
- ◆ Follow-up of the talk given by Kazuhito Ohmi **at the ecloud meeting held on 29/08/2011** (<https://project-ecloud-meetings.web.cern.ch/project-ecloud-meetings/2011/09.08.2011/sps2011-KazuhitoOhmi.pdf>) for the case of the SPS at injection
- ◆ **1<sup>st</sup> step: Can we predict the final transverse emittance due to the ecloud-induced fast instability “reliably”? => Does it depend on the simulation parameters (grid size, etc.)? See slide 2 => Action for the HDWG**
- ◆ **2<sup>nd</sup> step: Try and compare with LHC’s results, as these final emittances are the observables (BSRT measurements take several minutes)**

# Simulations from Kazuhito Ohmi

Constant final V-emittance (~ 4 times bigger here)

Field-free

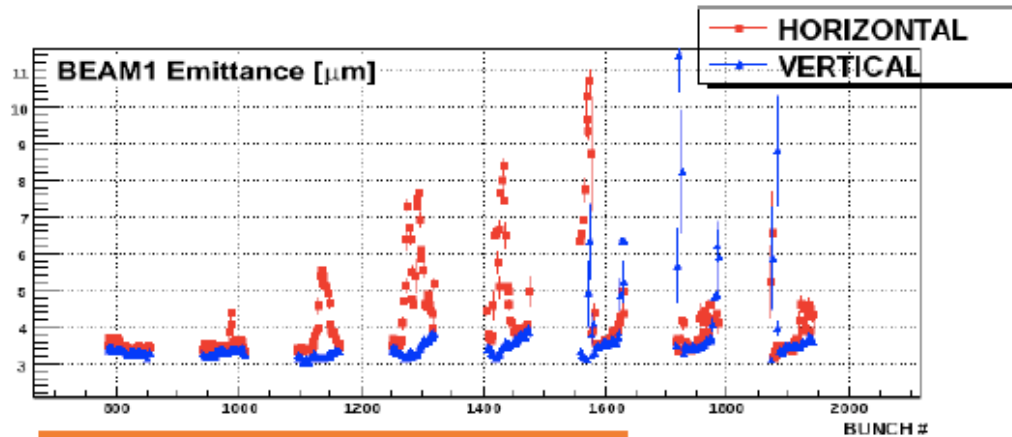
Bending magnet



=> Measuring the bunch-by-bunch final emittances in H and V could give us an estimate of the ecloud density along the batches, and evolution with time

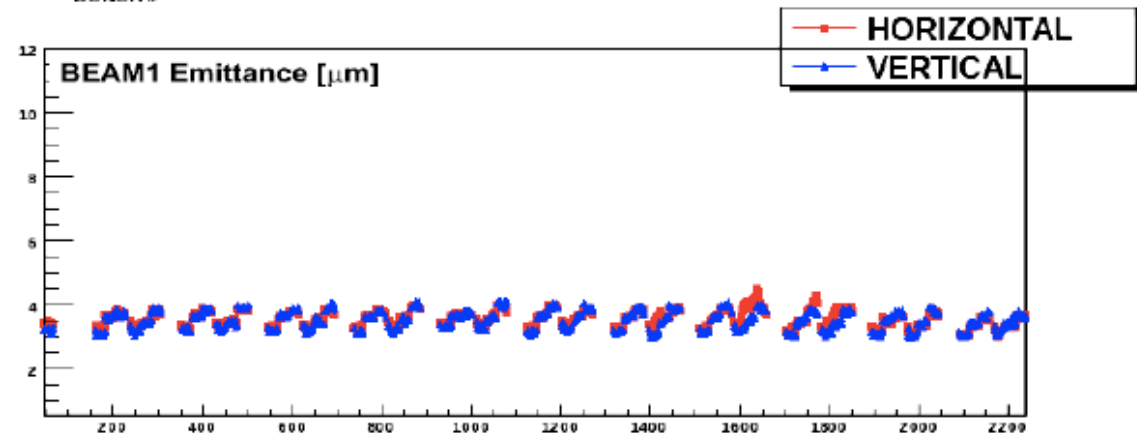
# Measurements in the LHC

During the 2011 LHC scrubbing run



Day 1 – 300 bunches

G. Arduini



Day 3 – 800 bunches

*IPAC11 slide  
from G. Rumolo*