Prospects of p-Pb collisions during the 2012 LHC HI run

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Motivation

The nuclear program of the LHC started brilliantly in 2010

- *O(10 μb^{-1}) PbPb data collected*
- *Many observations: multiplicities; flow; jet quenching; quarkonia suppression; Z/W production; heavy flavor....*

Dual role of pA in a nuclear collider program

Benchmarking:

- *Is the interpretation of AA data unambiguous without a pA control?*
- *nuclear PDFs and cold nuclear matter effects in general*

Own physics program

- *Experimental relevance of saturation of partonic densities*
- *Ultraperipheral collisions; other measurements of interest*

A pPb run in 2012

pA long ago recognized as a crucial element in the experimental nuclear program of the LHC

See: Proton-Nucleus Collisions at the LHC: Scientific Opportunities and Requirements arxiv:1105.3919.

Should the 2012 HI running time be devoted to pPb?

- *Can the findings in the PbPb program be interpreted unambiguously without/with? Some? Which? Can the others live without?*
- *Can other regimes of QCD be studied (also help a future lepton-ion collider)? Can they benchmark the PbPb bulk? Is the theory prepared?*
- *Can it be technically done with enough luminosity?*

This workshop to revisit the arguments in favor of a pA run in view of the new data from the PbPb collisions

Plan of the day

Morning

- *Theory review*
- *The LHC in pA mode*
- *Experiments (ALICE, ATLAS, CMS, LHCb, LHCf)*
- *Discussion*

Afternoon

- *Collisions in 2011 during the feasibility checks?*
- *Benchmarking (nPDFs and hard processes)*
- *Saturation of partonic densities; Ultraperipheral collisions*
- *Discussion*