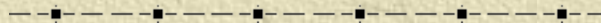


Multiple Interactions and the forward region



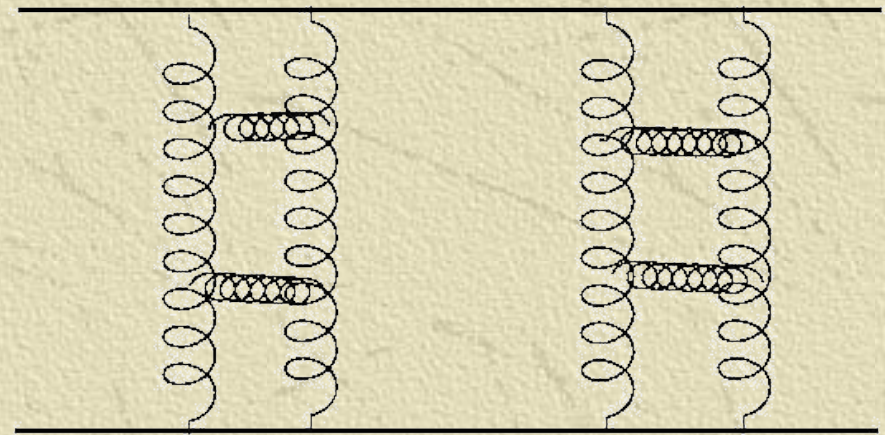
Michal Deák

a member of SmiX collaboration



Motivation

- ✧ People want to look for the Higgs boson and the physics beyond the Standard Model at LHC
- ✧ Need to better understand QCD background
- ✧ Contribution of multiple interactions not well understood



- ✧ “OK” at HERA energies
- ✧ **BUT!!!** What happens at LHC energies?

What does PYTHIA tell us?

✧ pp collisions at LHC energies

✧ We were looking on jets

with $E_{jet} > 100 \text{ GeV}$

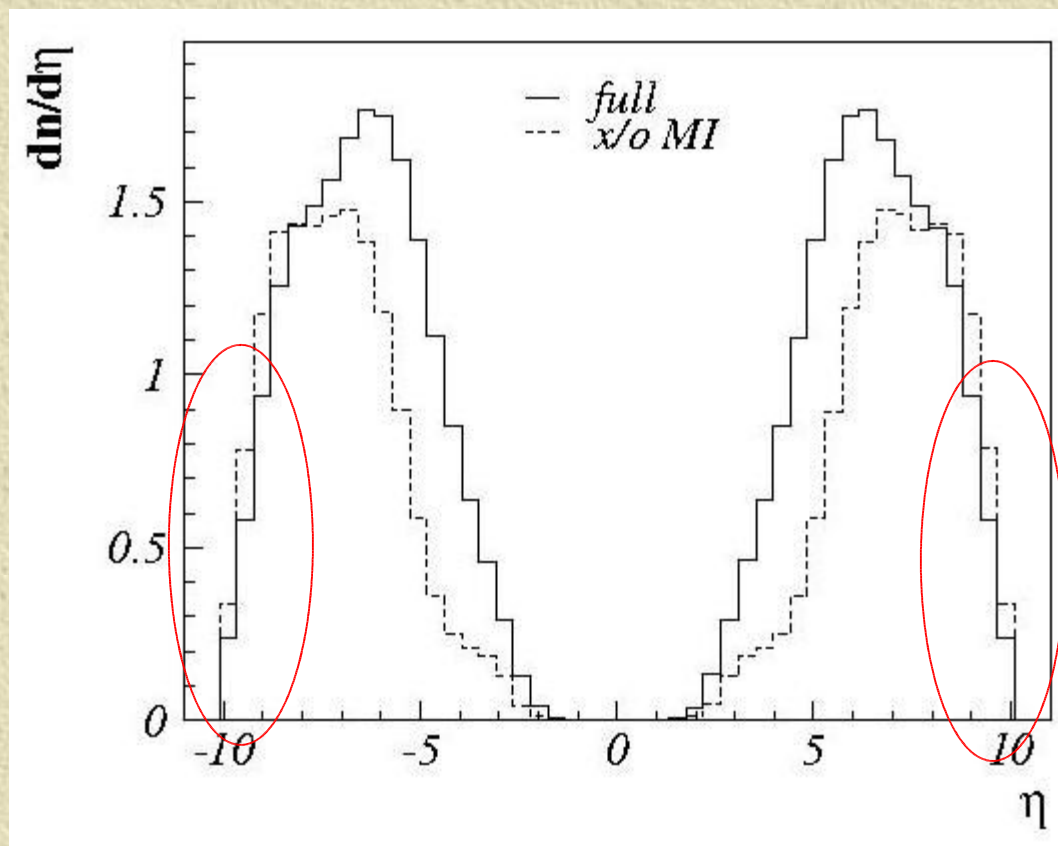
(not E_T , we would cut off the jets with large η)

Jet multiplicity and energy flow
as functions of η

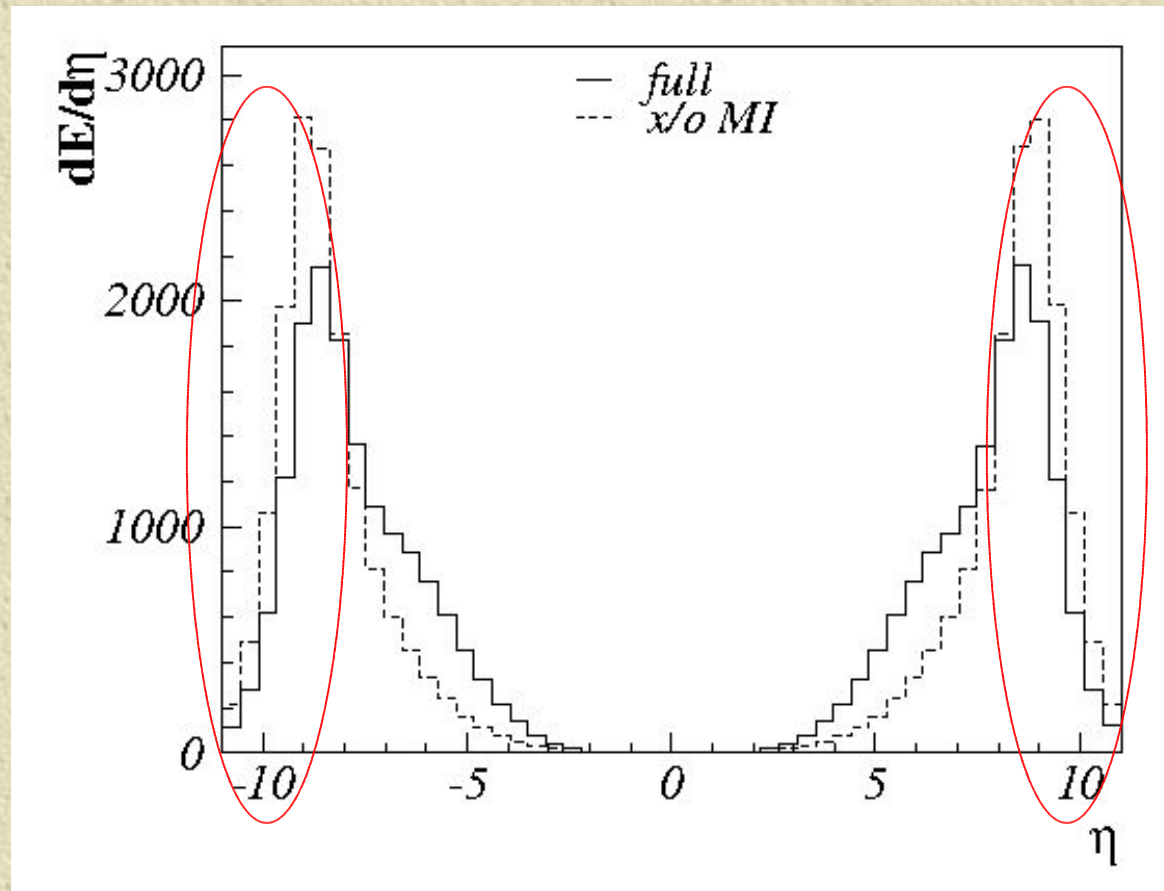
with and without multiple interactions

✧ p_T cut on hard processes 10 GeV

Jet cross section

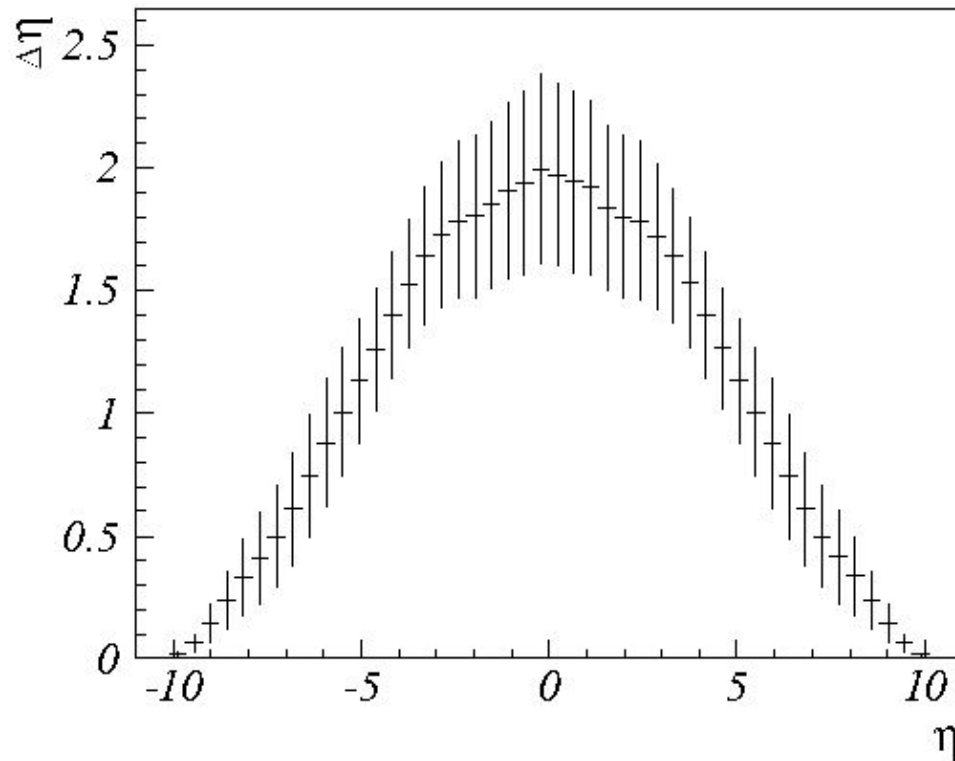


Energy flow

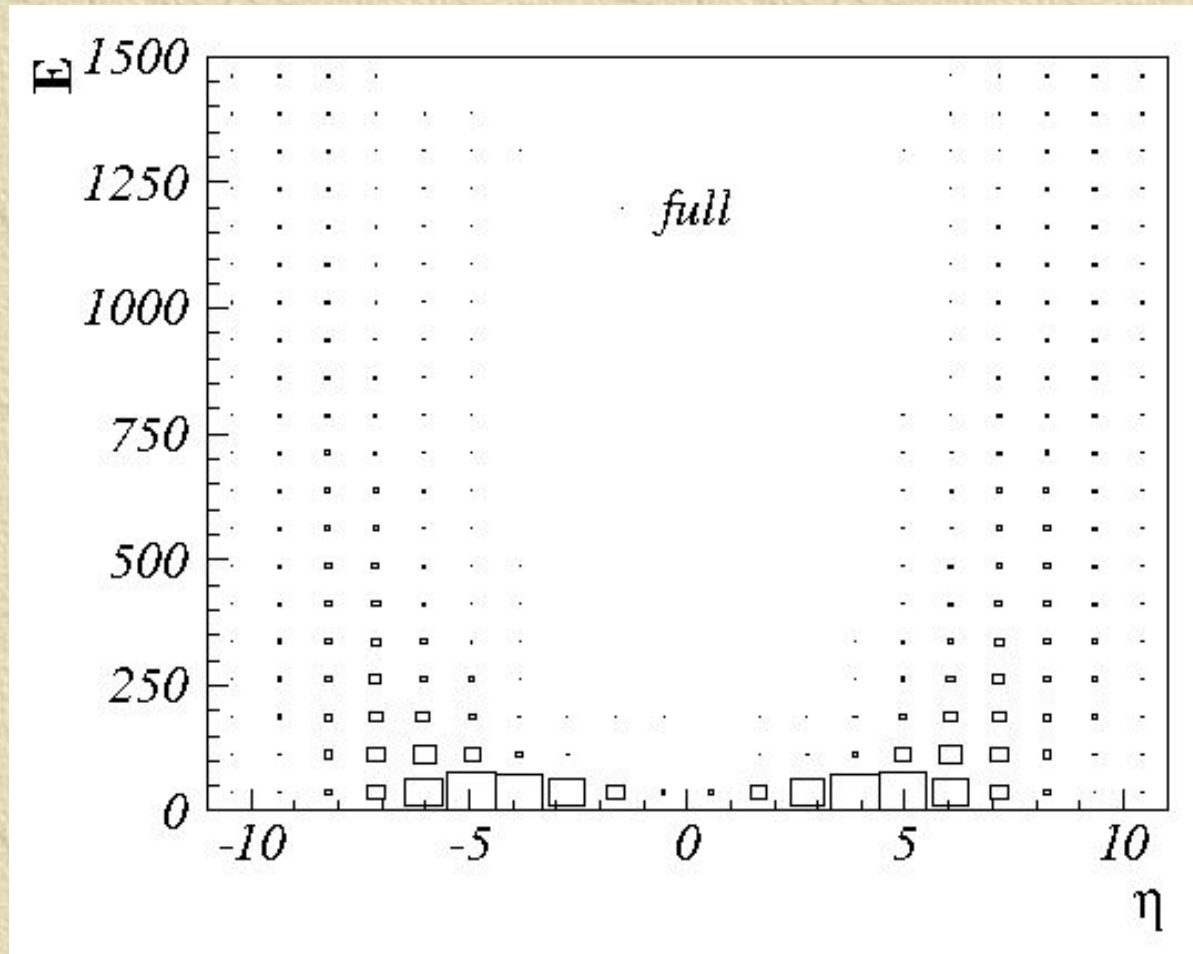


Jet η -diameter

- ✦ Defined as the difference of max and min η value of particles in jet



Energy / pseudorapidity correlation



?

Conclusions:

- ✧ If is PYTHIA right then...
- ✧ Difference in the forward region visible
- ✧ What it means?

It would be good to look at it.
To see very forward

