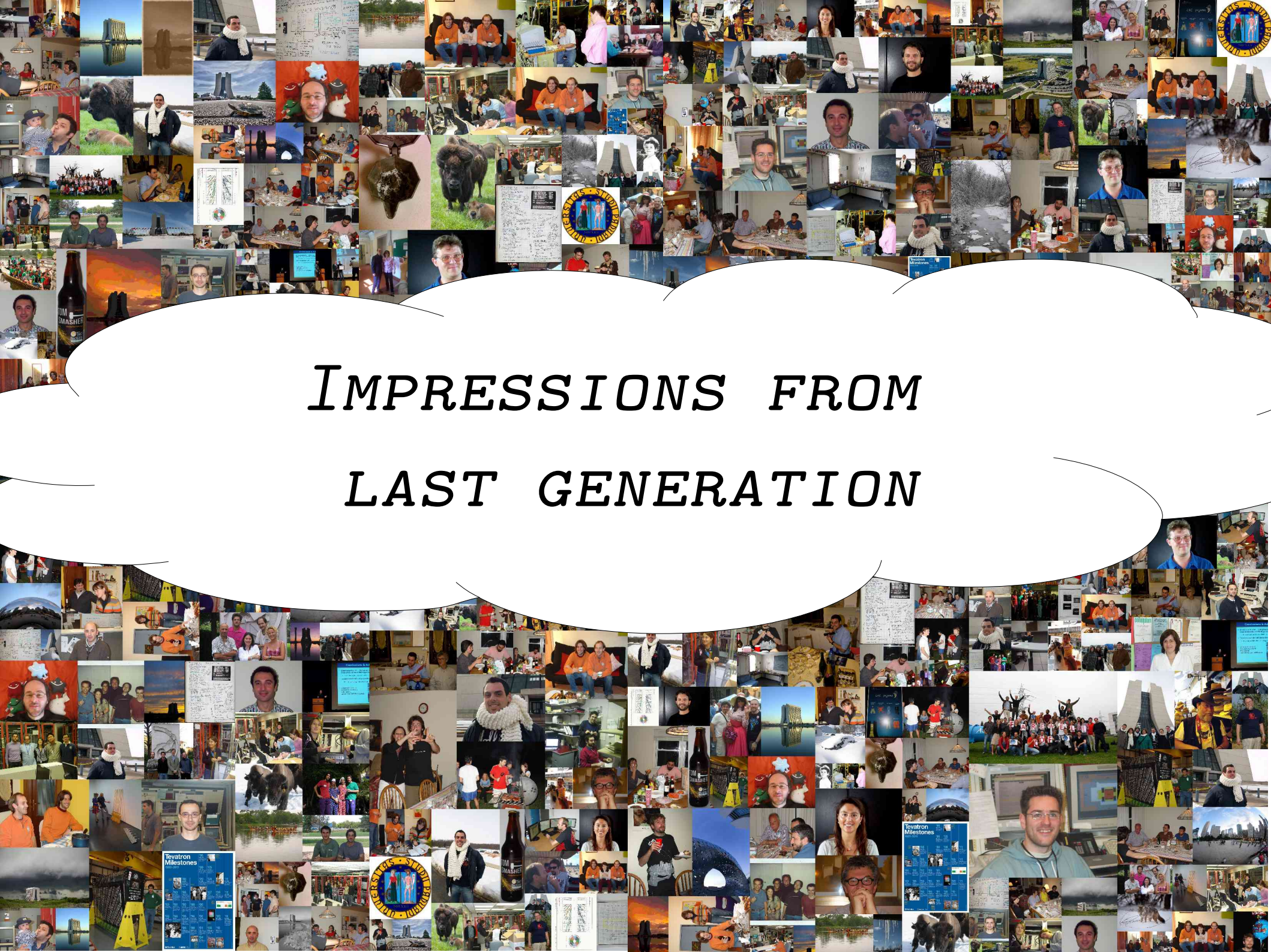
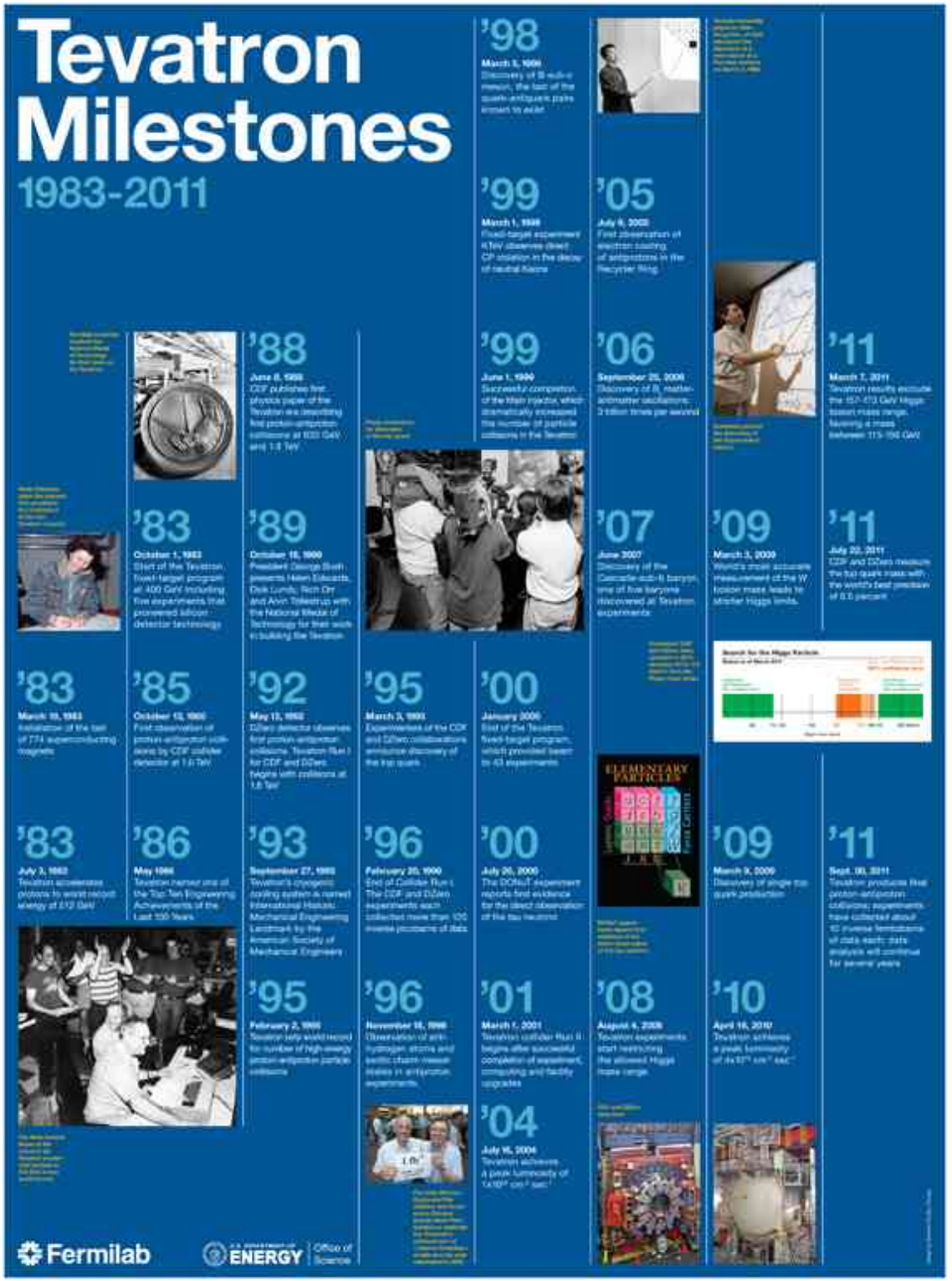
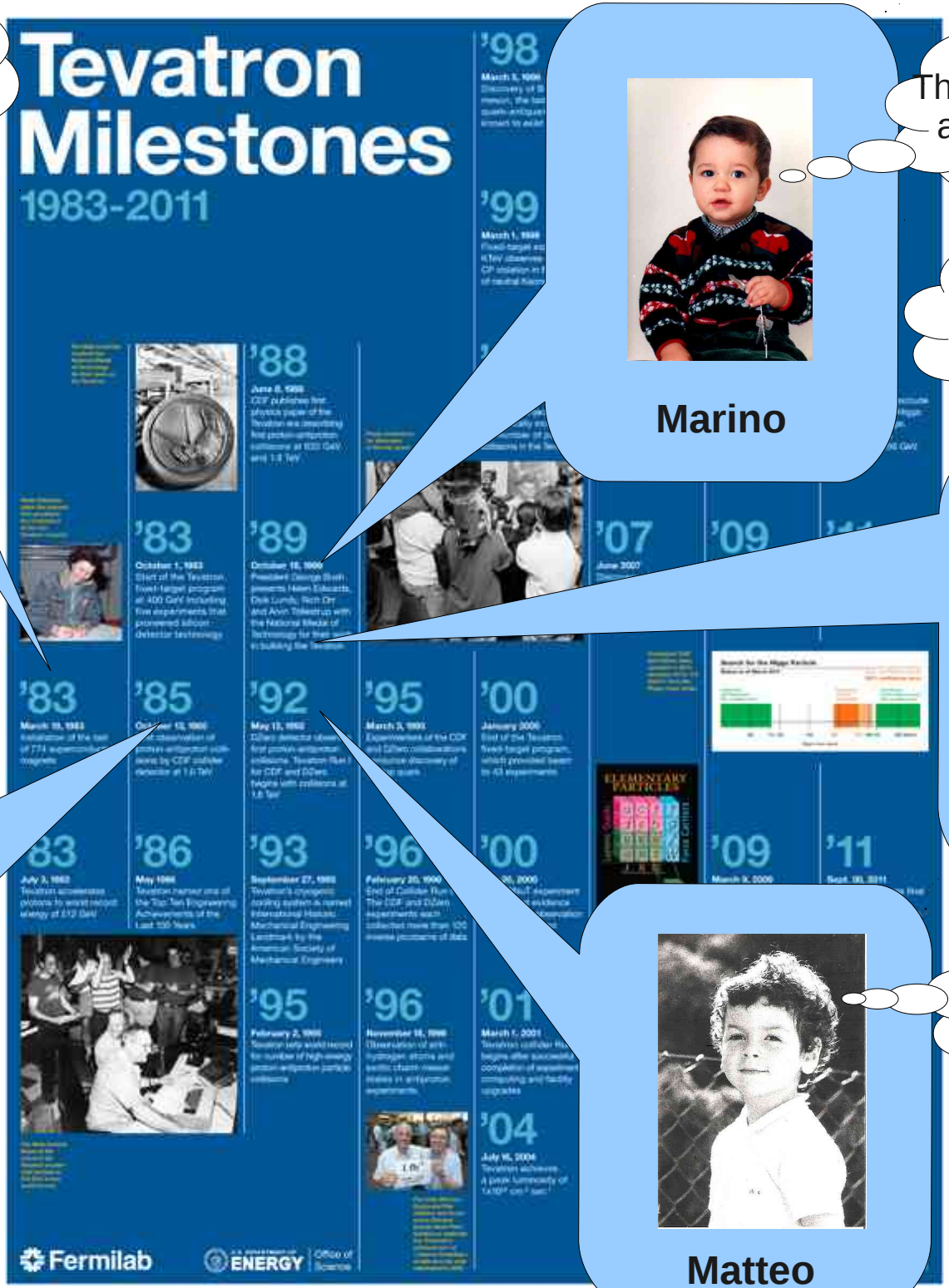

IMPRESSIONS FROM
LAST GENERATION



28 years of Tevatron....



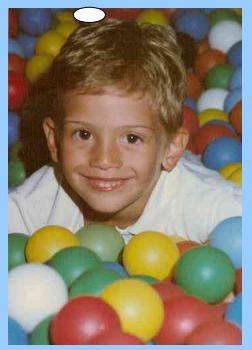
Let's look for the Eggs Boson...

Silvia

The keys of physics are in my hands!

Marino

I love all these colored particles!



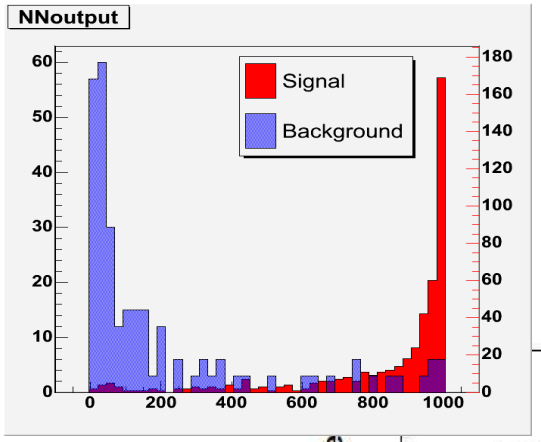
Stefano

I am ready to climb the mountains of physics!

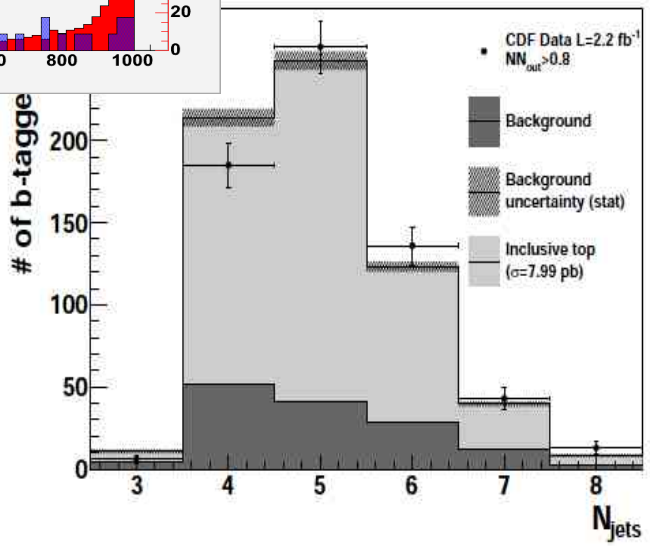
Pierluigi

ZZ … the 4 leptons as the 4 musketeers!

Matteo

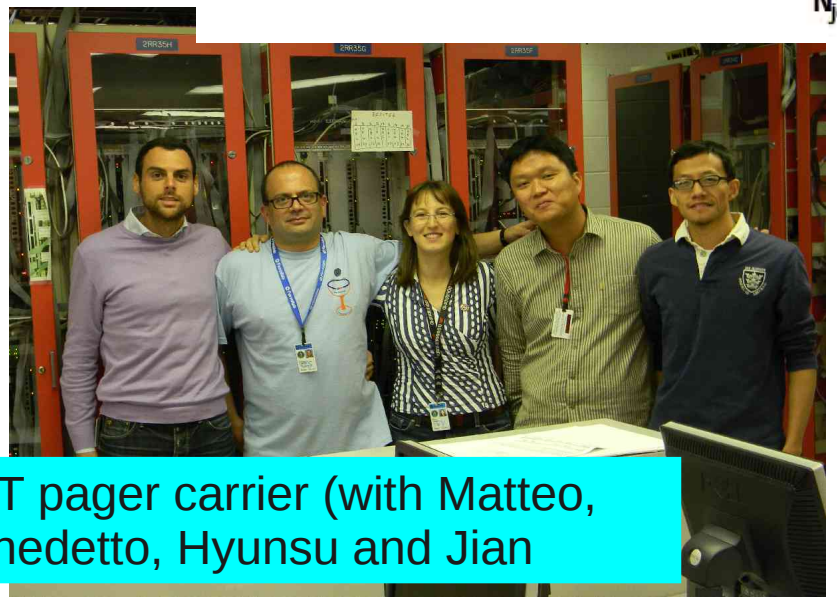


tt pair cross section in tau+jets and met+jets channels (with Gabriele)

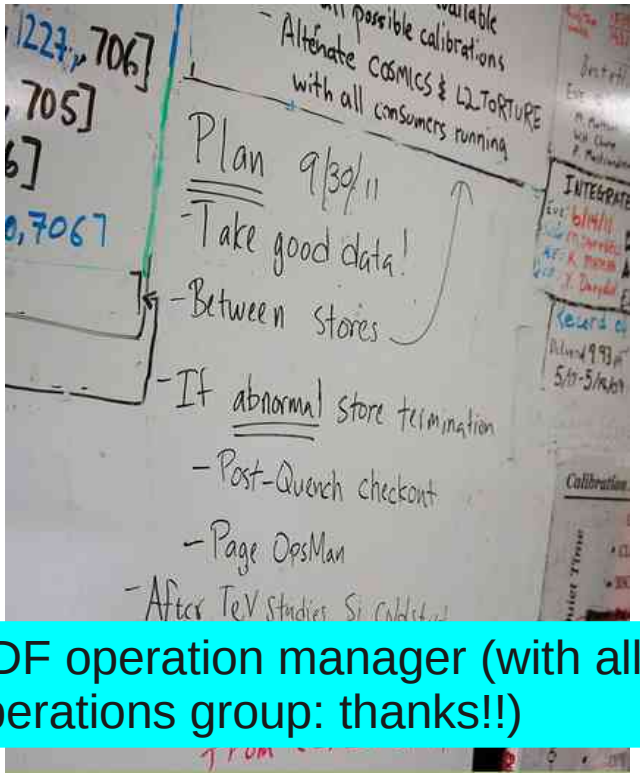


The Gigafitter board : upgrade of CDF online tracking system.

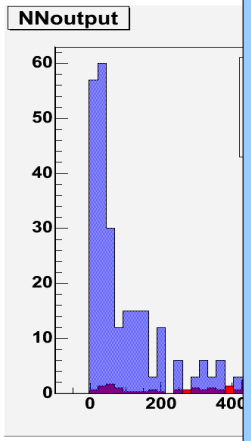
Thanks to Marco, Marino and the Officina Elettronica!

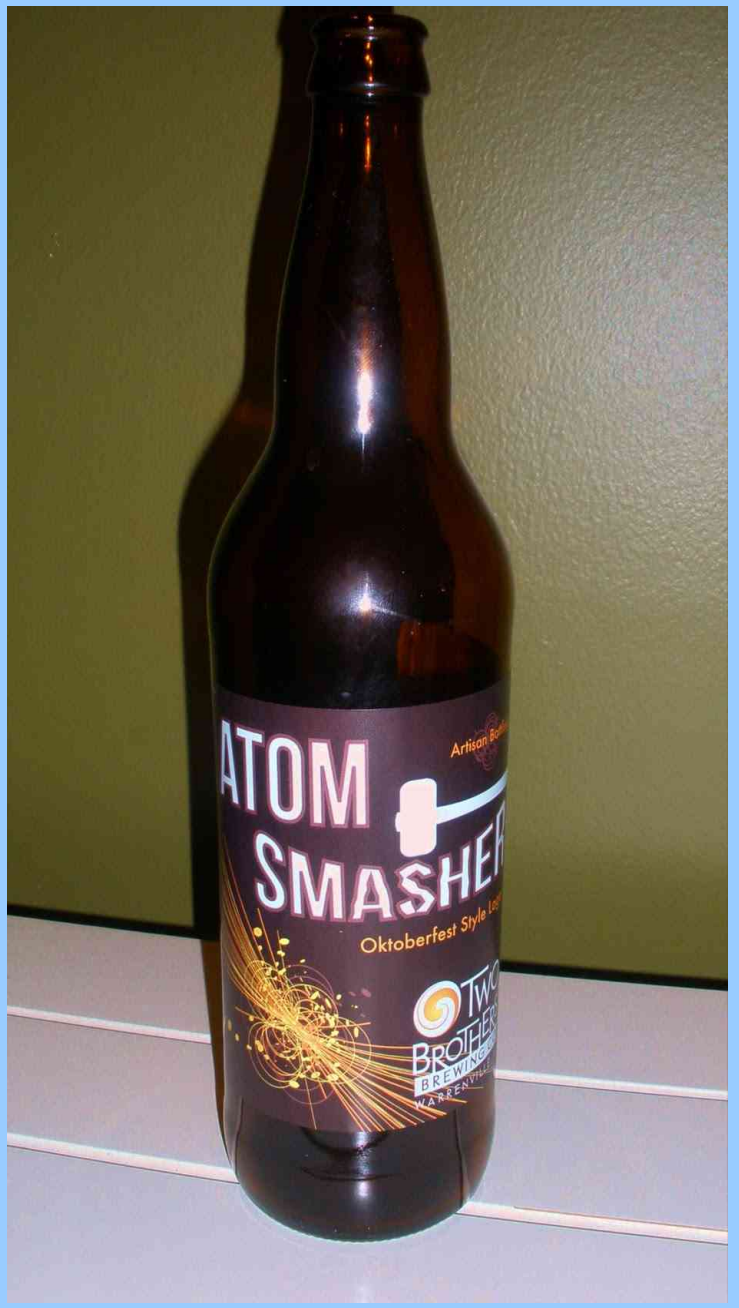


SVT pager carrier (with Matteo, Benedetto, Hyunsu and Jian



CDF operation manager (with all CDF operations group: thanks!!)



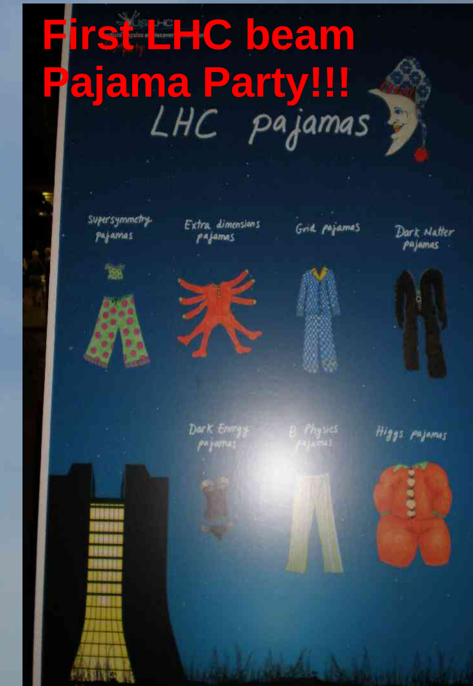


TWO BROTHERS BREWING CO
WARRENVILLE IL

SVT page
Benedetto

Started as a Summer Student in '08...

First LHC beam Pajama Party!!!




```
*** Break *** segmentation violation
 Generating stack trace...
 0xf7cc0759 in TObjArray::UncheckedAt(int) const + 0x13 from  0xf6689a7f in
TGenpBlock::Particle(int) at
asfdòakjfdkjaskfnlfnas.dnfkjdnskand.nds,anfjdn.s.kzjcnx.jkvznxc.jvzcbx.kjvb-kijaròoiwhef-
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ks-k
```
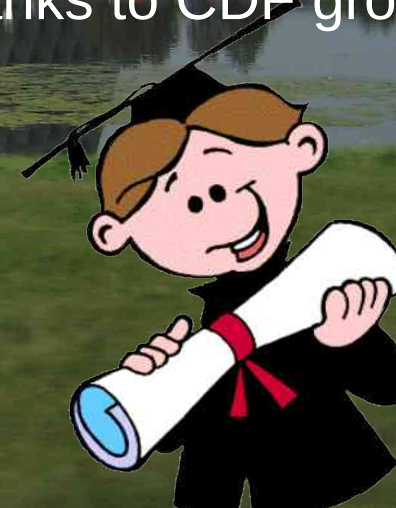
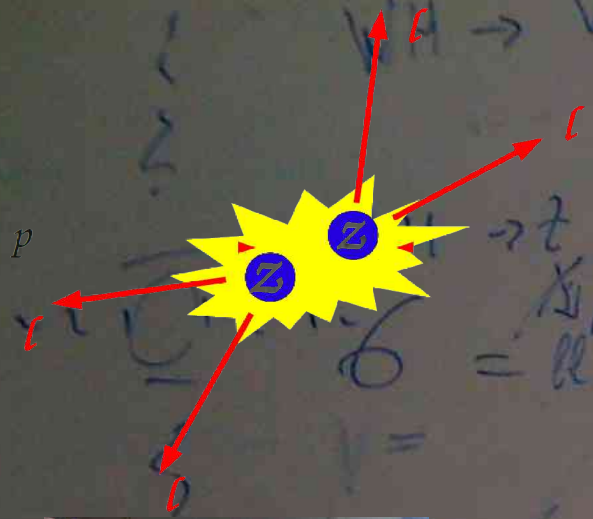

...it has been hard at the beginning, but after one year....

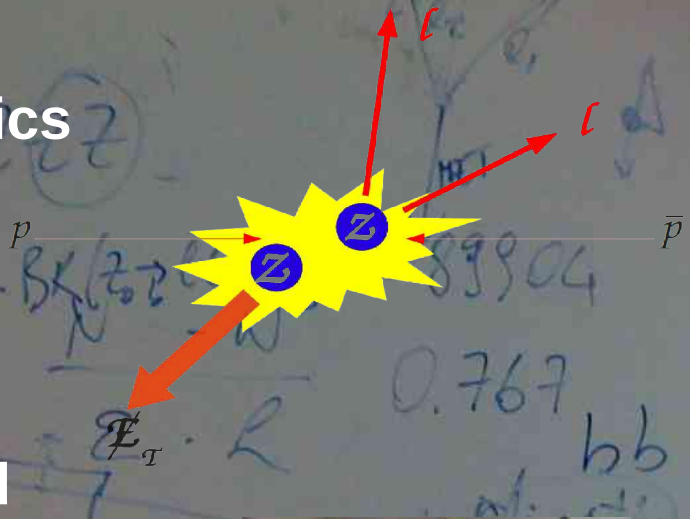
...thanks to CDF group...



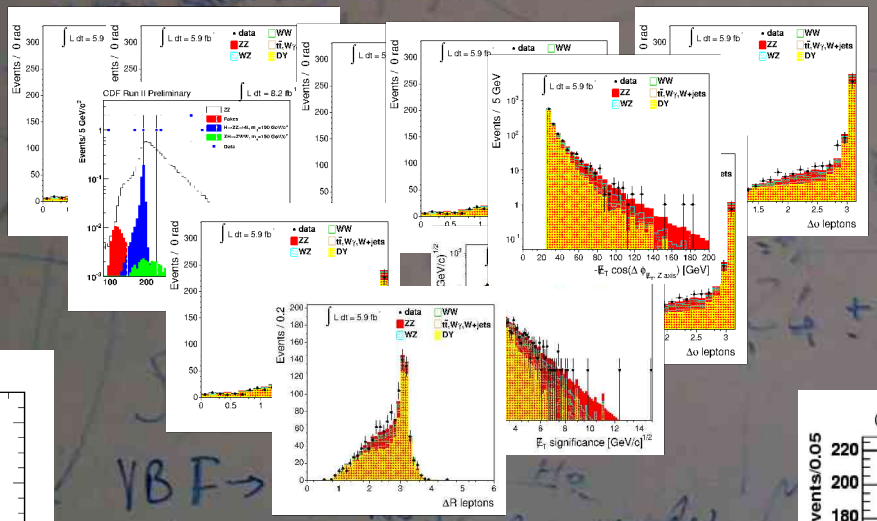
...I got my Master Degree!

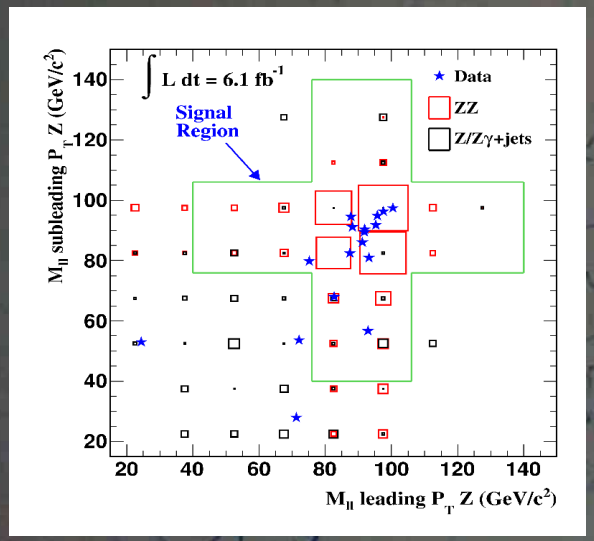
I'm spending my PhD working on Diboson physics



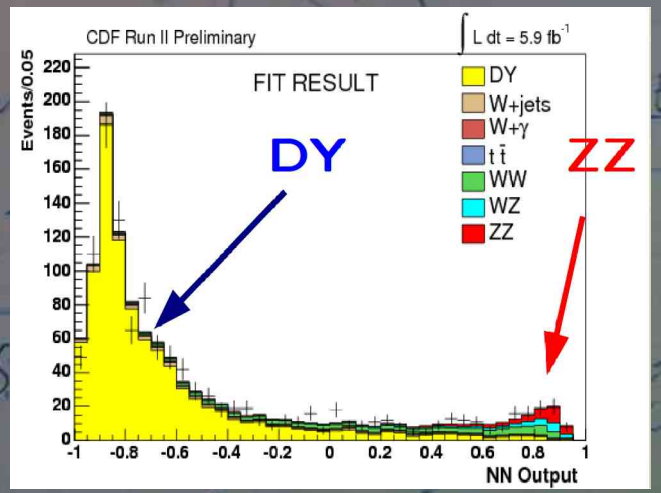


With the help of some food and many many plots...

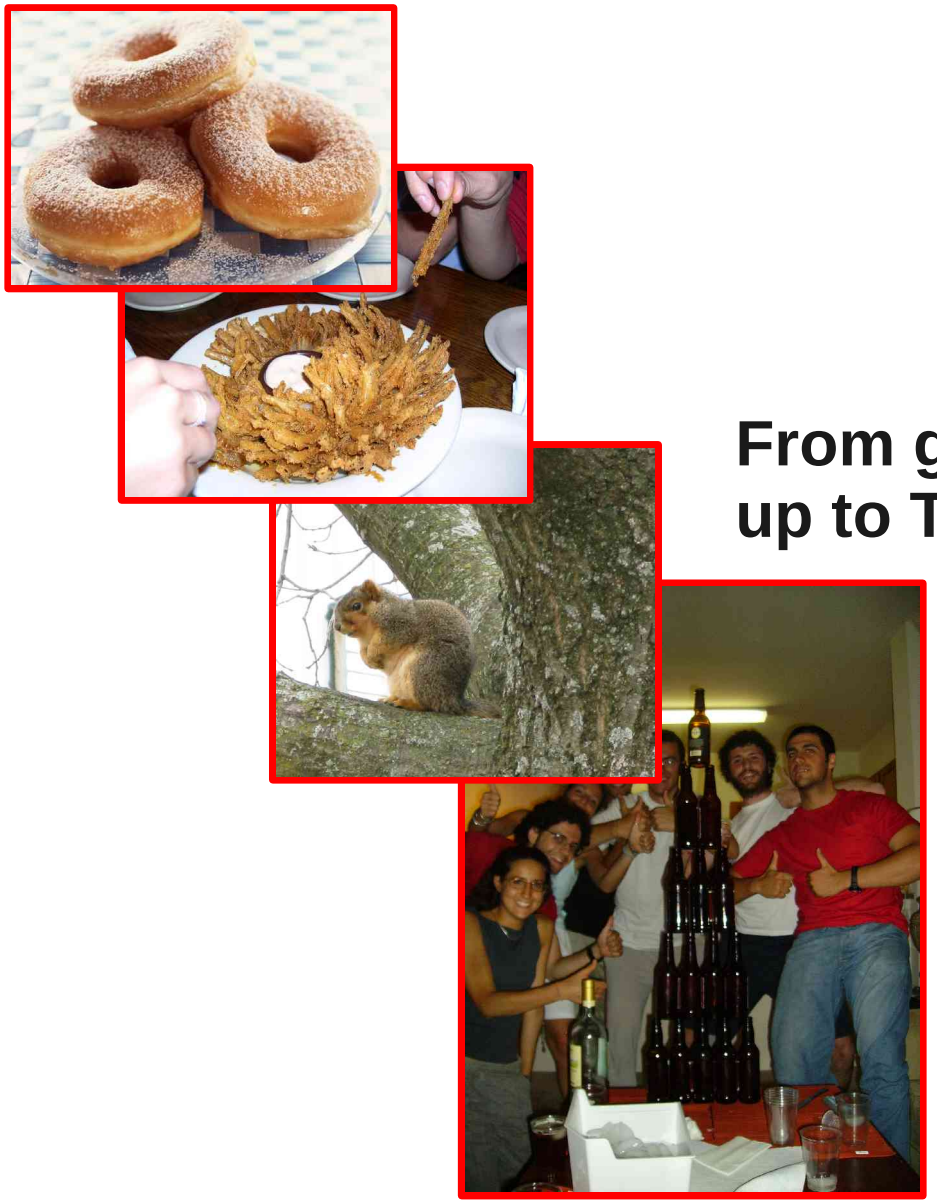




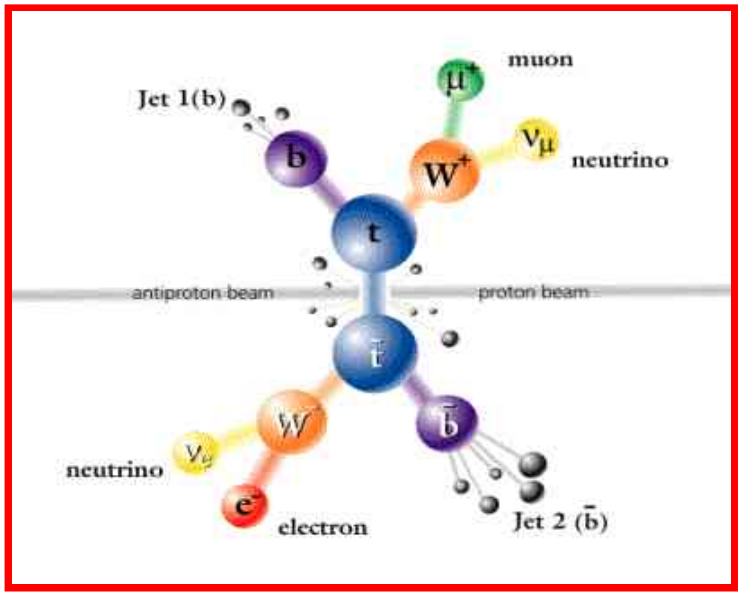
Measured ZZ production cross section in leptonic decay channel
(just submitted to Review)



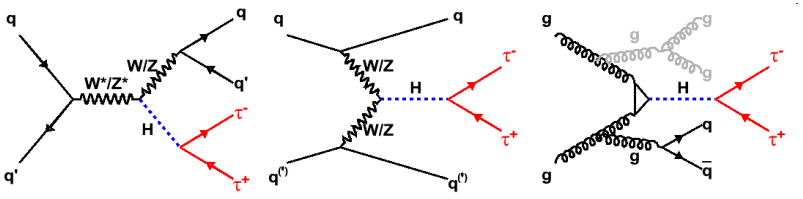
My first days at Fermilab as a Summer Student, in 2005

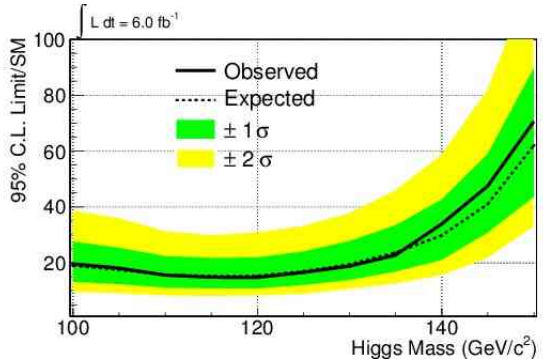


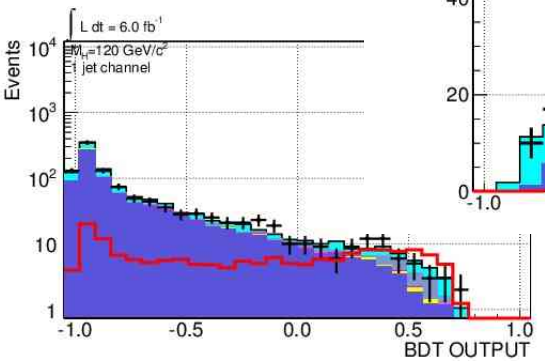
From gastronomy, ethology, static studies, up to Top Quark Physics

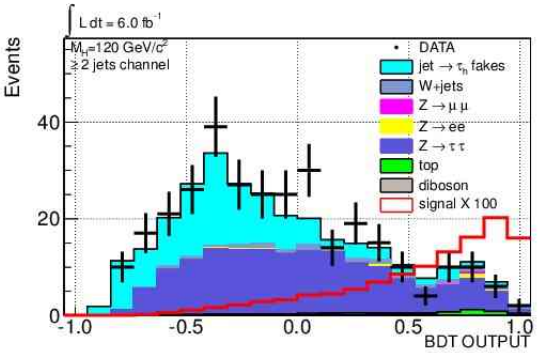


My Ph.D. Activity, in 2007-2010: Higgs boson search in the di-tau decay channel









Results are going to be submitted to PRL

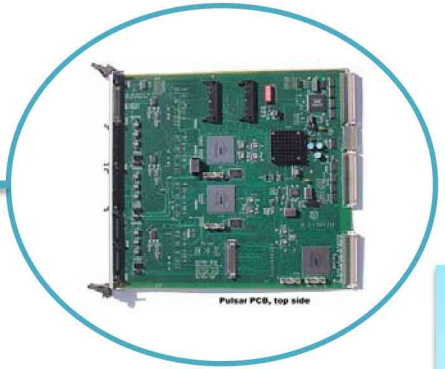
2011: working with Padova group in the measurement of Z → bb cross section and in the H → bb search

And a very new generation of young physicists is ready to help!
The future is in his hands!

Performance Study of a GPU in Real-Time Applications for HEP Experiments

Trigger level 2 of CDF

PULSAR Board

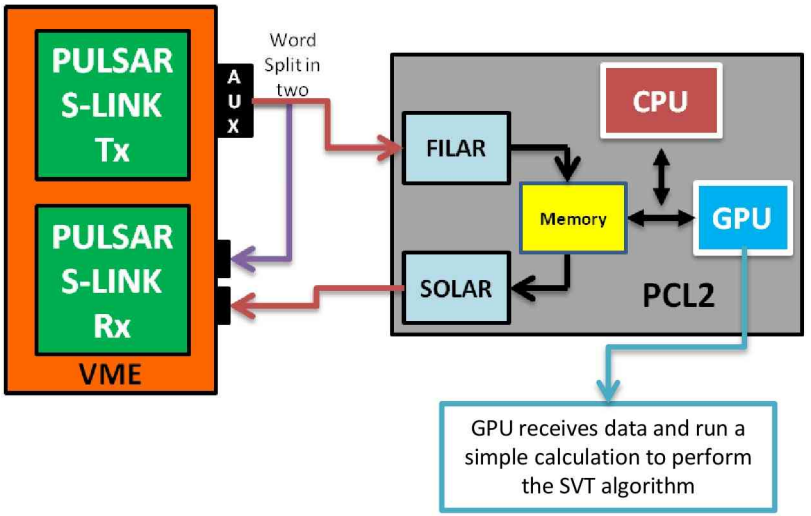


Commercial GPU
(*Graphics Processing Unit*)

Can commercial device replace dedicate hardware to develop online selections in a low-latency environment?

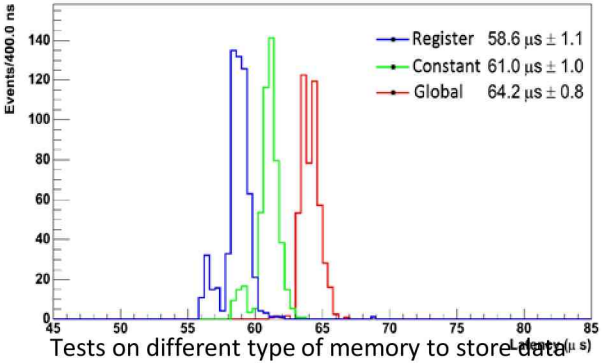
Preliminary studies: Latency Tests and Microbenchmarking on GPU

For very low latency (µs) it's necessary have a high precision Time-Detection setup



We have investigated:

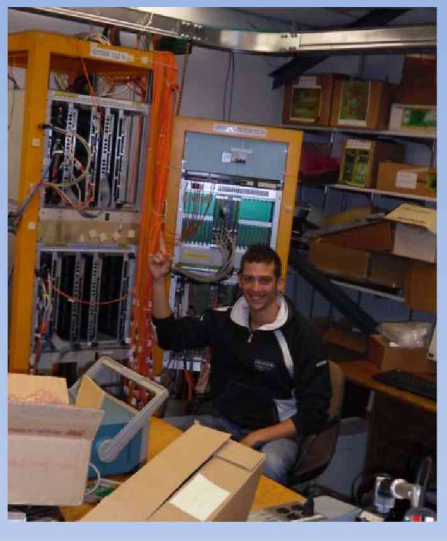
- GPU structure and workability
- Type of Memories
- Communication PC-GPU
- Data-access



Tests on different type of memory to store data

This technology is promising!

Works are still in progress

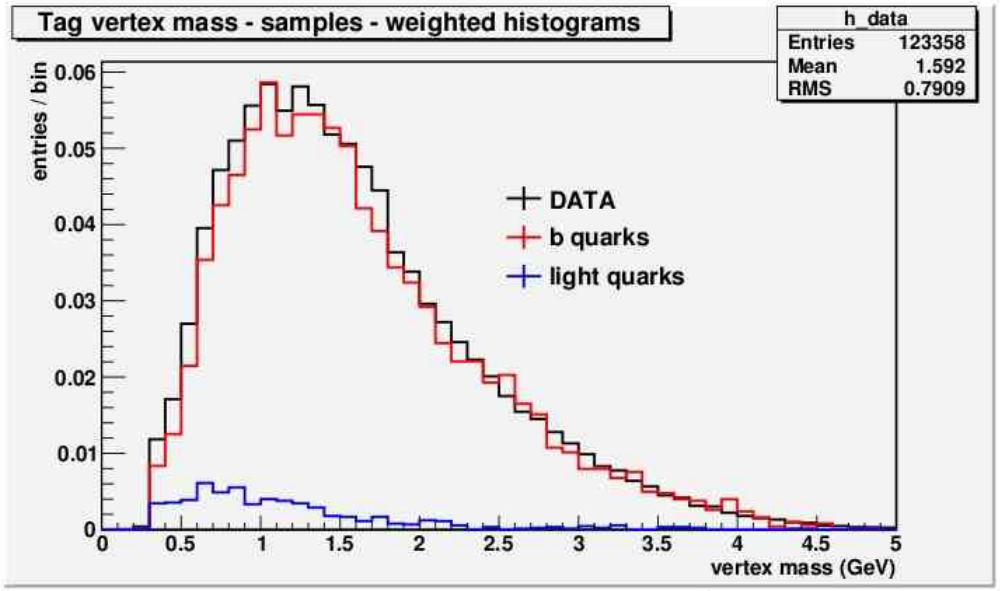


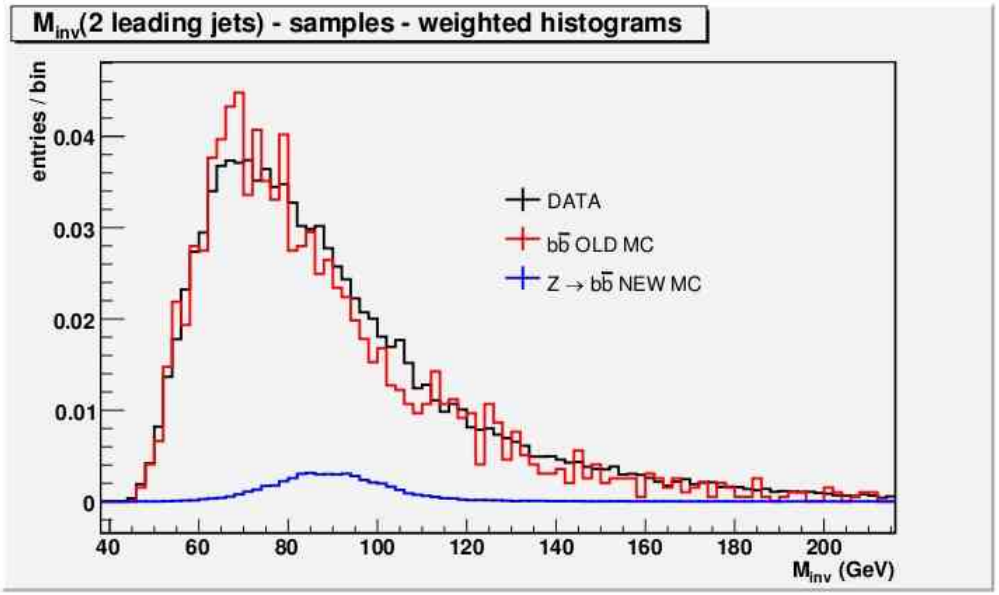
A great work experience in CDF …

… And something else

FNAL summer school 2011 —— data analysis: $Z \to b\bar{b}$

Looking for the Z resonance selecting back-to-back central b-tagged jets using the new DIJET_BTAG trigger





Sample composition

$b\bar{b}$	94.1 ± 2.0 %
$q\bar{q}$	5.9 ± 1.4 %
χ^2 / ndf	36.8 / 48
Prob	0.88

$\Rightarrow$ background $\sim$ QCD $b\bar{b}$

M_{inv}: fitting MC vs DATA

QCD $b\bar{b}$	95.1 ± 3.0 %
$Z \to b\bar{b}$	4.9 ± 2.4 %
χ^2 / ndf	78.4 / 74
Prob	0.34

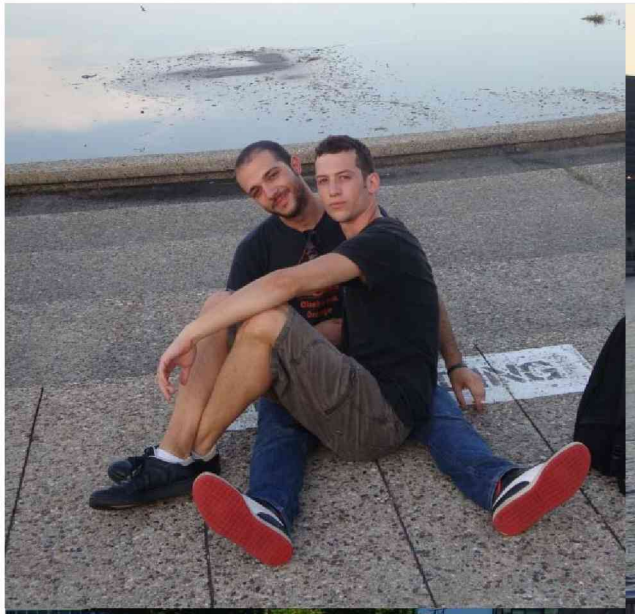
First results are ENCOURAGING

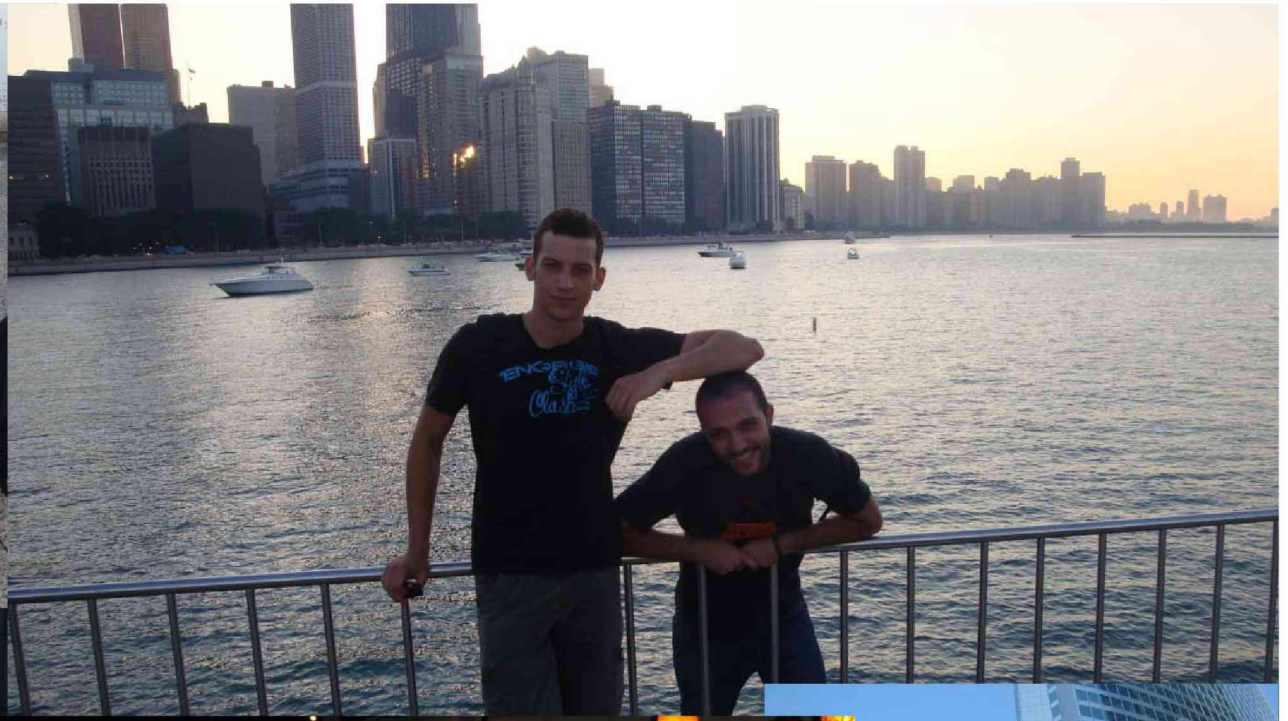
... work in progress ...

Besides numbers...

This experience at CDF gave me the chance to work in a wonderful research group...

... and in a very interesting environment






Resistance


But for us
this is just the
beginning…


Grazie