Status of the "Blind SUSY Analysis" Project

OUTLINE

I. Introduction
II. Production Chain
III. Available Samples
IV. Analysis Program
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I. Inroduction

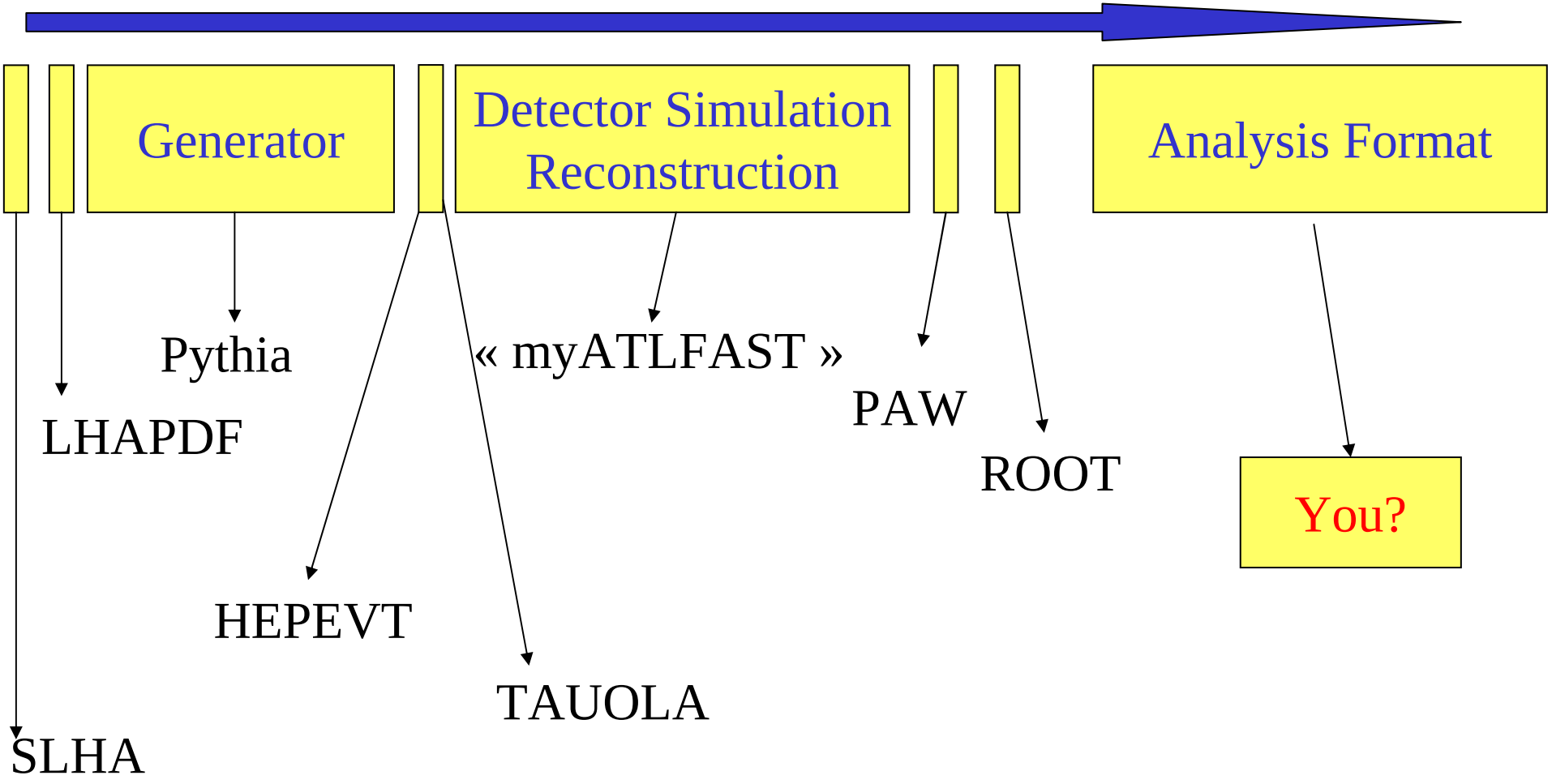
- A challenge to try to find what SUSY signals are hidden in some pseudo-data samples, the SM background being provided
  - if we believe we can find/measure SUSY in the complex LHC experiments environments… then this little simplified game should be a piece of cake…

- Main goals:
  - address blindly the issue of the SUSY&Higgs background
  - address the double challenge about a possible SUSY signal:
    1. figure out what is the underlying model (type of SUSY breaking, different hypotheses like Rp conservation, high scale universalities,…)
    2. figure out what are the values of the parameters in this model (may be pseudo-data might fit different model+parameters sets)

- Drawbacks:
  - crude detector simulation
  - and especially not a reliable trigger simulation

II. Production Chain

Global Schema



II. Production Chain

Generator

- SUSY Spectrum and Decay Table: SLHA Interface

- Event Generator: Pythia 6.325
  - Outputs σ_{LO} (evaluated on N+50k evts),
  - Underlying event tuning: "Tune A",
  - m_t=172.7 GeV,
  - Old Parton Shower,…

- Event Record: HEPEVT

- Parton Densities: LHAPDF 5.3 (CTEQ6LL)

- τ polarization and decay: TAUOLA 2.6
  - Had a problem for the SUSY processes: when gaugino→τ+X nothing is there in the tauface interface to handle this!!! Job was done only for V (W, Z) and Φ (Higgs) mothers
  - Therefore Tauola was turned off for the SUSY processes!!!
  - Have to undertsand tauface-jetset.f, to find a fix, to reproduce the signal and to merge it to the background anew

II. Production Chain

Detector Simulation

- Fast Simulation & Objects Reco: myATLFAST, inspired from the 98 ATLFAST v2 (Fortran). Variable names see:
  http://atlas.web.cern.ch/Atlas/GROUPS/PHYSICS/HIGGS/Atlfast.html

- Output Format: PAW CWNtuple
  - size limitation when simulating tracks → 5k
  - ID=3333
- Format Conversion: ROOT v5.14
  - H2root
  - TTree name: h3333
- Merging: TTree::Merge 20 bits of 5k evts → 100k evts ROOT-Tuples
- Actual outputs:
  - Atlfast*.root
  - Merge*_stat<Ngen>.log (contains the generated statistics)
  - demo*.out (Pythia & "myAtlfast" settings, 1 event record, σ_{LO} in mb)
- Storage into HPSS @ CCIN2P3:
  - Equivalent of CASTOR @ CERN
- Production: ~Automated Procedure based on basic Shell and Python scripts

II. Production Chain

Detector Fast Simulation: Trigger

L3 Menu	Online Cuts
1 EM 1 e	1 EM particle w/ p_T> 25 GeV, $\|\eta_{EM}\|$<2.5, isolation 1 e, p_T> 25 GeV, $\|\eta_e\|$<2.5, isolation
1 γ	p_T > 40 (60) GeV, $\|\eta_\gamma\|$<2.5, isolation
2 EM 2 e	p_T > 15 (20) GeV, $\|\eta_{EM}\|$<2.5 , isolation 2 e, p_T> 15 GeV, $\|\eta_e\|$<2.5, isolation
1 μ	p_T > 20 GeV, $\|\eta_\mu\|$<2.4, isolation
2 μ	p_T > 10 GeV, $\|\eta_\mu\|$<2.4, isolation
e+μ	p_T^e> 15 GeV, $\|\eta_e\|$<2.5, isolation & p_T^μ> 6 (10) GeV, $\|\eta_\mu\|$<2.4, isolation

Cuts from HLT (ATLAS TDR-016)

Isolation: see offline reco

II. Production Chain

Detector Fast Simulation: Trigger

L3 Menu	Online Cuts
1 j	1 jet w/ p_T > 180 (400) GeV, $\|\eta_j\|$<3.2
2 j	2 jets w/ p_T >350 GeV , $\|\eta_j\|$<3.2
3 j	3 jets w/ p_T > 75 (165) GeV , $\|\eta_j\|$<3.2
4 j	4 jets w/ p_T > 55 (110) GeV , $\|\eta_j\|$<3.2
j70+xE70	1 jet w/ p_T >70 GeV & E_T^{mis}>70 GeV , $\|\eta_j\|$<3.2
xE200	E_T^{mis}>200 GeV
jE1000	H_T(jets)>1000 GeV

Any other terms from the ATLAS HLT TDR-016 can easily be added in the analysis program as cuts are applied on Atlfast reco'd quantities

II. Production Chain

Detector Fast Simulation: Offline Reco

ATLFAST Global Parameters	Value
Inst. Lumi. Option	Low
B-field	ON
Smearing	ON
Tracks Reco	ON

Charged Tracks	Cuts
Reco criteria	• $p_T^{track} > 0.5$ GeV, $\|\eta_{track}\| < 2.5$

II. Production Chain

Detector Fast Simulation: Offline Reco

Isolated e and γ	Cuts
Reco criteria	• $p_T^{e/\gamma} > 5$ GeV, $\lvert\eta_{e/\gamma}\rvert < 2.5$
Isolation	• $\Delta R(e/\gamma, j) > 0.15$ • $E_T[\,0.2 < \Delta R(e/\gamma, \text{clusters}) < 0.4\,] < 10$ GeV

$$\frac{\sigma_E}{E} = \frac{12\%}{\sqrt{E}} \oplus \frac{0.245}{E_T} \oplus 0.7\%$$ e

$$\frac{\sigma_E}{E} = \frac{10\%}{\sqrt{E}} \oplus \frac{0.245}{E_T} \oplus 0.7\%$$ γ

$$\begin{cases} \sigma_\theta = \dfrac{6.5\%}{\sqrt{E}} \leftrightarrow |\eta| < 0.8 \\ \sigma_\theta = \dfrac{5\%}{\sqrt{E}} \leftrightarrow 0.8 < |\eta| < 1.4 |\eta| < 2.5 \\ \sigma_\theta = \dfrac{40\%}{\sqrt{E}} \leftrightarrow 1.4 < \end{cases}$$ γ

II. Production Chain

Detector Fast Simulation: Offline Reco

Isolated μ	Cuts
Reco criteria	• $p_T^{\mu} > 6$ GeV, $\lvert\eta_{\mu}\rvert < 2.5$
Isolation	• $\Delta R(\mu,j) > 0.4$ • $E_T[\,\Delta R(\mu,X) < 0.2\,] < 10$ GeV

$$\frac{\sigma_{p_T}}{p_T} = 0.05\% \times p_T \oplus 1.2\% \leftrightarrow |\eta| < 2.0$$

μ

II. Production Chain

Detector Fast Simulation: Offline Reco

Calorimeter clusters	Cuts
Granularity	• **0.1x0.1 ←→ $|\eta|< 3$** • **0.2x0.2 ←→ $|\eta|> 3$**
Acceptance	• **$|\eta|< 5$**
Reco criteria	• **Cluster init.: E_T(init.)> 1.5 GeV** • **Cluster (final): E_T> 5 GeV (D: 10 GeV)** • **Cluster cone: ΔR=0.4**

II. Production Chain

Detector Fast Simulation: Offline Reco

τ–jets	Cuts
Reco criteria	• Cone: $\Delta R(had,jet)<0.3$ • $p_T^{\tau} > 10$ GeV, $\lvert\eta_\tau\rvert< 2.5$ • $p_T^{\tau-had} / p_T^{jet} > 90\%$ • No ε or mistag rates are applied so far!!!

Missing E_T	Cuts
Reco criterion	• $E_T(cells)> 0$ GeV • $\lvert\eta(cells)\rvert< 5$ • Vector sum is performed on reco'd objects (e, μ, jets,…) plus on unclustered cells (which E is smeared w/ the jet resolution)

II. Production Chain

Detector Fast Simulation: Offline Reco

Jets Reco	Cuts
Algo	• simple cone • $\Delta R=0.4$
Reco criteria	• $p_T^{jet} > 10$ GeV (D: 15 GeV) • $\lvert\eta_{jet}\rvert < 5$
• no jet energy calibration is applied so far	

$$\begin{cases} \dfrac{\sigma_E}{E} = \dfrac{50\%}{\sqrt{E}} \oplus 3\% \leftrightarrow |\eta| < 3 \\ \dfrac{\sigma_E}{E} = \dfrac{100\%}{\sqrt{E}} \oplus 3\% \leftrightarrow |\eta| > 3 \end{cases}$$

jets

II. Production Chain

Detector Fast Simulation: Offline Reco

Jets Flavor Tagging	Value
• b-jets: from the list of inclusive reco'd jets • equivalent procedure for c-jets	• $p_T(b) > 5$ GeV after FSR • $\Delta R(b,b\text{-jet}) < 0.2$ • $\lvert\eta_{b\text{-jet}}\rvert < 2.5$
• ε(b-tagging)=60% and mistag rates for c-jets and light flavor jets taken from ATLFAST-B are applied in the analysis program	

III. Available Samples

Process List: SM BKGD

- The HPSS sub-directory is given wrt to (ccali.in2p3.fr):

cchpssd0:/hpss/in2p3.fr/home/m/muanza/GDR_SUSY/SUSY_Blind/

Process Name HPSS sub-dir	Production Index	Analysis Index
QCD (5<pT*<10) ★	10	0
QCD (10<pT*<20) ★	11	1
QCD (20<pT*<40) ★	12	2
QCD (40<pT*<80) ★	13	3
QCD (80<pT*<160) ★	14	4
QCD (160<pT*<320)	15	5
QCD (320<pT*<980)	16	6
QCD (980<pT*<7000)	17	7

Process Name HPSS sub-dir	Production Index	Analysis Index
cc (5<pT*<10) ★	20	8
cc (10<pT*<20) ★	21	9
cc (20<pT*<40) ★	22	10
cc (40<pT*<80)	23	11
cc (80<pT*<160)	24	12
cc (160<pT*<320)	25	13
cc (320<pT*<980)	26	14
cc (980<pT*<7000)	27	15

HPSS sub-dir: BKGD/qcd
Current Stat: 8.0M evts

HPSS sub-dir: BKGD/cc
Current Stat: 8.0M evts

QCD: 2→2 (u/d/s/g)

★ : All sub-process w/ $\sigma > 2.5\times10^5$ pb
NOT PRODUCED in Pseudo-DATA Sample!!!

III. Available Samples

Process List: SM BKGD

Process Name	Production Index	Analysis Index
bb (5<pT*<10) ★	30	16
bb (10<pT*<20) ★	31	17
bb (20<pT*<40) ★	32	18
bb (40<pT*<80)	33	19
bb (80<pT*<160)	34	20
bb (160<pT*<320)	35	21
bb (320<pT*<980)	36	22
bb (980<pT*<7000)	37	23

Process Name	Production Index	Analysis Index
γ+jets (5<pT*<10) ★	30	24
γ+jets (10<pT*<20) ★	31	25
γ+jets (20<pT*<40)	32	26
γ+jets (40<pT*<80)	33	27
γ+jets (80<pT*<160)	34	28
γ+jets (160<pT*<320)	35	29
γ+jets (320<pT*<980)	36	30
γ+jets (980<pT*<7000)	37	31

HPSS sub-dir: BKGD/bb
Current Stat: 8.0M evts

HPSS sub-dir: BKGD/gam+jets
Current Stat: 8.0M evts

III. Available Samples

Process List: SM BKGD

Process Name	Production Index	Analysis Index
tt	50	32
t+b	51	33
t+q	52	34

Process Name	Production Index	Analysis Index
γ+W	60	35
γ+Z	61	36

HPSS sub-dir: BKGD/tt
Current Stat: 1.0M evts

HPSS sub-dir: BKGD/t+b
Current Stat: 1.0M evts

HPSS sub-dir: BKGD/t+q
Current Stat: 1.0M evts

HPSS sub-dir: BKGD/gam+w
Current Stat: 1.0M evts

HPSS sub-dir: BKGD/gam+z
Current Stat: 1.0M evts

Comments: **the flavor excitation single-top process is not available in Pythia 6.3**

III. Available Samples

Process List: SM BKGD

Process Name	Production Index	Analysis Index
WW	70	37
WZ	71	38
$\gamma^*/Z+\gamma^*/Z$	72	39

Process Name	Production Index	Analysis Index
W(+jets) → l+ν	100	40
W(+jets) → τ+ν	101	41
W(+jets) → qq'	105	42

Comments: l stands for e or μ

HPSS sub-dir: BKGD/ww
Current Stat: 1.0M evts

HPSS sub-dir: BKGD/wz
Current Stat: 1.0M evts

HPSS sub-dir: BKGD/zz
Current Stat: 0.9M evts

HPSS sub-dir: BKGD/w_lnu
Current Stat: 1.0M evts

HPSS sub-dir: BKGD/w_taunu
Current Stat: 1.0M evts

HPSS sub-dir: BKGD/w_qq
Current Stat: 1.0M evts

Comments: in Pythia 6.3 the WZ process does not include the W+γ* contribution

III. Available Samples

Process List: SM BKGD

Process Name	Production Index	Analysis Index
2γ(+jets) (2<m*<60 GeV)	208	58
2γ(+jets) (60<m*<130 GeV)	**218**	**62**
2γ(+jets) (130<m*<250 GeV)	**228**	**66**
2γ(+jets) (250<m*<500 GeV)	238	70
2γ(+jets) (500<m*<1960 GeV)	**248**	**74**
2γ(+jets) (1960<m*<14000 GeV)	**258**	**78**

HPSS sub-dir: BKGD/2γ(+jets)
Current Stat: 1.0/1.0/0.9/1.0/1.0/1.0M evts

Process Name	Production Index	Analysis Index
γ*/Z(+jets) → νν	**260**	**79**

HPSS sub-dir: BKGD/z_nunu
Current Stat: 1.0M evts

III. Available Samples

Process List: SM BKGD

Process Name	Production Index	Analysis Index
γ*/Z(+jets) → ll (2<m*<60 GeV)	200	43
γ*/Z(+jets) → ττ (2<m*<60 GeV)	**201**	**44**
γ*/Z(+jets) → ll (60<m*<130 GeV)	210	45
γ*/Z(+jets) → ττ (60<m*<130 GeV)	**211**	**46**
γ*/Z(+jets) → ll (130<m*<250 GeV)	220	47
γ*/Z(+jets) → ττ (130<m*<250 GeV)	**221**	**48**

Process Name	Production Index	Analysis Index
γ*/Z(+jets) → ll (250<m*<500 GeV)	230	49
γ*/Z(+jets) → ττ (250<m*<500 GeV)	**231**	**50**
γ*/Z(+jets) → ll (500<m*<1960 GeV)	240	51
γ*/Z(+jets) → ττ (500<m*<1960 GeV)	**241**	**52**
γ*/Z(+jets) → ll (500<m*<1960 GeV)	250	53
γ*/Z(+jets) → ττ (500<m*<1960 GeV)	**251**	**54**

HPSS sub-dir: BKGD/z_ll
Current Stat: 6.0M evts

HPSS sub-dir: BKGD/z_tautau
Current Stat: 6.0M evts

III. Available Samples

Process List: SM BKGD

Process Name	Production Index	Analysis Index
γ*/Z(+jets) → qq (2<m*<60 GeV)	205	55
γ*/Z(+jets) → cc (2<m*<60 GeV)	206	56
γ*/Z(+jets) → bb (2<m*<60 GeV)	207	57
γ*/Z(+jets) → qq (60<m*<130 GeV)	215	59
γ*/Z(+jets) → cc (60<m*<130 GeV)	216	60
γ*/Z(+jets) → bb (60<m*<130 GeV)	217	61

HPSS sub-dir: BKGD/z_qq
Current Stat: 5.8M evts

HPSS sub-dir: BKGD/z_cc
Current Stat: 6.0M evts

HPSS sub-dir: BKGD/z_bb
Current Stat: 5.9M evts

III. Available Samples

Process List: SM BKGD

Process Name	Production Index	Analysis Index
γ*/Z(+jets) → qq (130<m*<250 GeV)	225 (800k)	63
γ*/Z(+jets) → cc (130<m*<250 GeV)	226	64
γ*/Z(+jets) → bb (130<m*<250 GeV)	227	65
γ*/Z(+jets) → qq (250<m*<500 GeV)	235	67
γ*/Z(+jets) → cc (250<m*<500 GeV)	236	68
γ*/Z(+jets) → bb (250<m*<500 GeV)	237	69

Process Name	Production Index	Analysis Index
γ*/Z(+jets) → qq (500<m*<1960 GeV)	245	71
γ*/Z(+jets) → cc (500<m*<1960 GeV)	246	72
γ*/Z(+jets) → bb (500<m*<1960 GeV)	247 (900k)	73
γ*/Z(+jets) → qq (1960<m*<14000 GeV)	255	75
γ*/Z(+jets) → cc (1960<m*<14000 GeV)	256	76
γ*/Z(+jets) → bb (1960<m*<14000 GeV)	257	77

HPSS sub-dir: BKGD/z_qq
Current Stat: 5.8M evts

HPSS sub-dir: BKGD/z_cc
Current Stat: 6.0M evts

HPSS sub-dir: BKGD/z_bb
Current Stat: 5.9M evts

Process Name	Production Index	Analysis Index
Total SM BKGD $85=\Sigma_i$ (i=0 to 79)	500	85

79.5M evts

Comments: I chose not to produce the low mass resonance processes like g+J/Ψ or g+Y, nor any diffractive processes

III. Available Samples

Pseudo-Data Set #1

- Differences wrt SM BKGD samples:
  - Obviously the MC truth infos are removed
  - All the events not passing any trigger conditions are rejected
  - 15 SM BKGD sub-processes (low pT non resonant processes weren't simulated)
  - HPSS sub-dir: Pseudo_DATA/final/0/100_inv_pb
  - Indices:
    - Production: 1
    - Analysis: 86
  - a SUSY signal is added and events are shuffled (but no use of Tauola so far)
  - it contains the following processes:

III. Available Samples

Pseudo-Data Set #1

Process Name	Production Index	Analysis Index
$\sim q/\sim g/\sim b_{1/2/}/\sim t_{1/2}$ pairs	1040	-
$\sim\nu/\sim l$ pairs	1042	-
$\sim q/\sim g + \sim\chi^{+}/\sim\chi^{0}$ pairs	1043	-
$\sim\chi^{+}/\sim\chi^{0} + \sim\chi^{+}/\sim\chi^{0}$ pairs	1044	-

HPSS sub-dir: ???
Current Stat: ???M evts

III. Available Samples

Pseudo-Data Set #1

Process Name	Production Index	Analysis Index
h+X (X=V, tt, not Φ)	2010	-
h+bb	2011	-
H+X (X=V, tt, not Φ)	2020	-
H+bb	2021	-
A+X (X=V, tt, not Φ)	2030	-
A+bb	2031	-
H^++X (X=V, not Φ)	2040	-
h/H/A/H^+ pairs	2050	-

HPSS sub-dir: ???
Current Stat: ???M evts

III. Available Samples

Pseudo-Data Set #1

- Pseudo-DATA Set #1:
  - Currently: 0.1 fb^{-1} sample
    - ~4.5M events
    - 7 root-tuples
    - ~12 Gb
  - Short term: 1 fb^{-1} sample
    - under production…

III. Available Samples

Example of SUSY Signal & BKGD

A simulation to search for the following signal illustrates the Blind SUSY Analysis machinery

Process Name	Production Index	Analysis Index
Signal	1000	80
Signal Cplt	2000	81
SUSY Cplt	3000	82
Higgs Cplt	4000	83
Higgs&SUSY BKGD 84=(81–80)+82+83	5000	84

HPSS sub-dir: Signal/glss+sq_2l+2b+jets+met
Current Stat: 0.5M evts

HPSS sub-dir: Signal_Cplt/glss+sq_2l+2b+jets+met
Current Stat: 0.4M evts

HPSS sub-dir: SUSY_Cplt/glss+sq_2l+2b+jets+met
Current Stat: 1.0M evts

HPSS sub-dir: HIGGS_Cplt/glss+sq_2l+2b+jets+met
Current Stat: 0.3M evts

Signal:

$$pp \rightarrow \tilde{q} + \tilde{g} \rightarrow \overline{b}\,\tilde{b}_1$$

$$\tilde{q} \rightarrow q\,\tilde{\chi}_1^0 \qquad \tilde{b}_1 \rightarrow b\,\tilde{\chi}_2^0 \rightarrow \ell^+\ell^-\,\tilde{\chi}_1^0$$

Signal Cplt:

$$pp \rightarrow \tilde{q} + \tilde{g} \rightarrow X$$

SUSY Cplt:

- **All available SUSY processes other than** $pp \rightarrow \tilde{q} + \tilde{g}$
- **All available Higgs boson pairs production:**

$$pp \rightarrow h^0A^0 / H^0A^0 / H^\pm h^0 / H^\pm H^0 / H^+H^-$$

HIGGS Cplt:

- **All other available single Higgs boson production processes:**

$$pp \rightarrow h^0 / qh^0 / gh^0 / Wh^0 / Zh^0 / q\bar{q}h^0$$

IV. Analysis Program

Description of the Analysis Program

- The root-tuples to analyze are simple ones without any objects (just converted CWN ntuples)
- The analysis program is a C-- code based on a ROOT MakeClass method
- In fact I'm not programming in C++ yet (I'm not even a C expert), so it's more like a Fortran designed code written in C within a C++ MakeClass (may be this is reassuring to other programming dynosaurs like me… yet it might be frightening for for C++ fans…)!?!?!
- …
- A detailed description of the functionalities are under preparation… Send me a mail (muanza@in2p3.fr or muanza@fnal.gov) in the meantime if you have any comments/questions

IV. Analysis Program

« How To »

- How to analyze the available MC samples:

1. Copy the production tar file:
   - **… set ROOT v5.14…**
   - **mkdir analysis_dir**
   - **cd analysis_dir**
   - **rfcp cchpssd0:/hpss/in2p3.fr/home/m/muanza/GDR_SUSY/SUSY_Blind/ANALYSIS/Susy_Blind_Analysis.tar.gz .**
   - **tar xvfz Susy_Blind_Analysis.tar.gz**
   - **gmake clean**
   - **gmake EXE=analysis**
   - **cp param.txt_save param0.txt**
   - **…EDIT param.txt: replace all the <XXX_*> with values…**
     - **Ex: VAR=XXX_VARIABLE# → VAR=mET#**
   - **./analysis >& log**
   - **Look at ./log**
   - **root –l <VARIABLE_CUT>.C**
   - **Edit <VARIABLE_CUT>.C if needed**

IV. Analysis Program

4 Types of Outputs

- **Fixed graphical format:**
  - **<VAR>_<Cut_LVL>.eps: file containing the level of selection as well as the plotted variable in its name**

- **Mutable graphical format:**
  - **<VAR>_<Cut_LVL>.C: ROOT macro.C to adjust the plot if needed**

- **Histograms file:**
  - **<VAR>_<Cut_LVL>.root: ROOT file containing all the sub-processes histos**

- **Analysis logfile:**
  - **<you_name_it>: contains the processes names, σ_{LO}, N_{gen}, N_{acc}, ε, N_{exp},…**

IV. Analysis Program

Print Out for Each Sub-Process

Process: tt

Copying: rfcp
cchpssd0:/hpss/in2p3.fr/home/m/muanza/GDR_SUSY/SUSY_Blind/BKGD/tt/Atlfast_50_1.root
/scratch/muanza1013.ccwl0166/

520351911 bytes in 49 seconds through eth0 (in) and local (out) (10370 KB/sec)

Tuple_Name: Atlfast_50_1.root
Processing Chain_32
Root-tuple name: Atlfast_50_1.root
nb of events on file 100000
nb of events to read 100000
Event #: 0
Event #: 10000
…
Event #: 90000
Removing: rm Atlfast_50_1.root
Nchain(tt)=100000 Evts
Ngen(tt)=100000 Evts
Nacc(tt)=186 Evts
Eff(tt)=(0.19 +/- 0.01)%
Xsect(tt)=632.00 pb
Max Rate(tt)= 0.00 Hz
Nexp(tt)=(11755.20 +/- 861.13) Evts

VII. Conclusions

Production

- Samples of Pythia events passed through an Atlfast-like simulation
- Almost all the available SM background processes are produced
- A signal working example (~q + ~g → jets+2b+2l+mET) is also provided
- The total statistics amounts to ~85M events
- The root-tuples are available in HPSS at CCIN2P3
- Copies of part of the samples can be made elsewhere (even on your laptop)

Analysis

- A crude working analysis program is provided
- It should be fairly easy to run it and get some distributions…
- It can run on your laptop (CERNLIB, ROOT,…, Pythia, LHAPDF)
- Comments and feed-back are welcome

VIII. Prospects

Production

- An « How To » produce private signal templates will be available in the coming weeks
- Documentation will be provided on the GDR-SUSY/Tools webpage:
  - http://www-clued0.fnal.gov/~muanza/SUSY_Tools_Group.html
  - this talk will be posted there

Access to Data

- I'll need some volunteers to copy the full dataset to CERN (Castor),…
- I'll provide filtered events samples upon request

VIII. Prospects

SUSY or NP Fitters

- Hand over different measurements + uncertainties to:
  - Sfitter
  - Fittino
  - SPA
  - N. Arkani-Hamed program,…

Results

- LH07 Proceedings: open the box by the end of the year?
- French « GDR-SUSY » Group meetings:
  - Groups: Colliders & Tools
  - Next meetings:
    - september @ Marseille (french)
    - november @ Brussels (european)
  - send me a mail if you want to get on the Tools mailing list
  - I offer a bottle of champagne to the winner!!!