Towards a public analysis database
for LHC new physics searches using MadAnalysis 5

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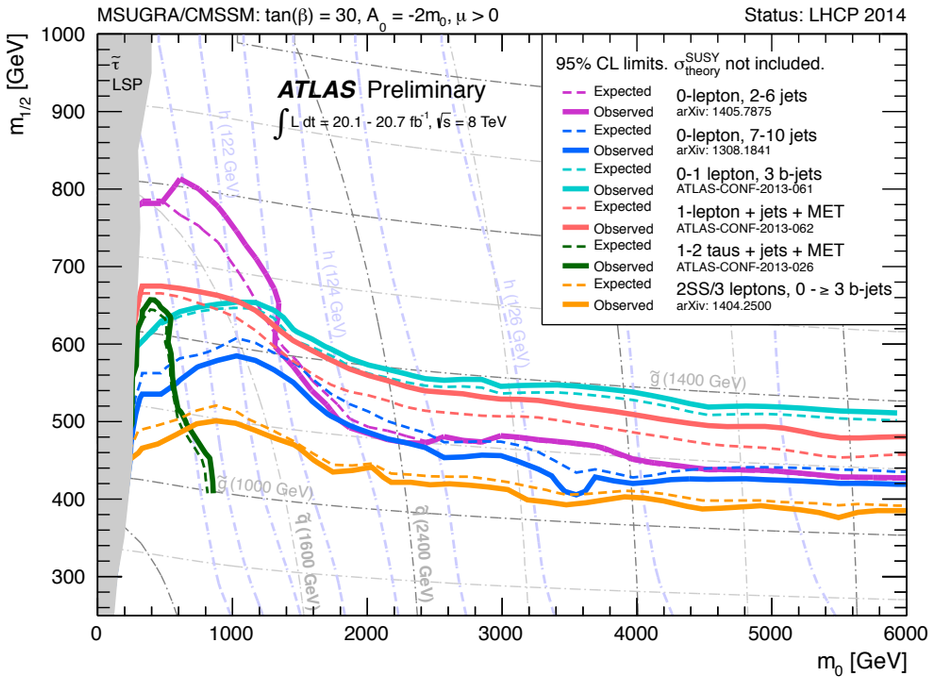
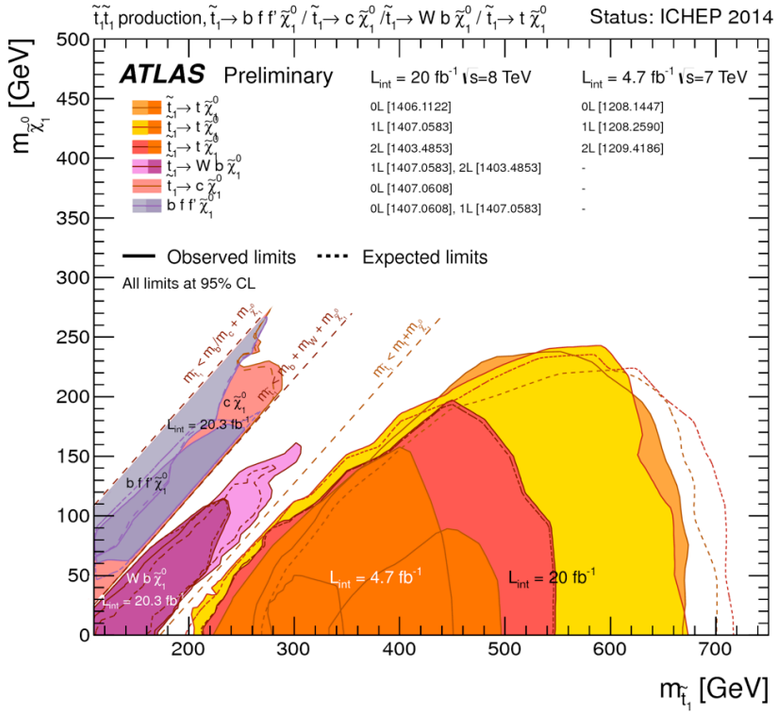
based on arXiv:1407.3278

ATLAS SUSY group meeting, 21 Aug 2014

Motivation

- LHC was built as machine for discovery.
- ATLAS and CMS perform searches for new physics in many different channels.
- They interpret their results within popular models as well as within topology-based "Simplified Model Spectra" (SMSs).
- However, there exists a plethora of models and scenarios, and theorists constantly come up with new ones.
- Need to interpret LHC results in the contexts of all kinds of models of new physics; crucial for working out the implications for new physics and unravel the correct theory beyond the SM
  ⇨ requires community-wide effort !
- True for Run-1 and more so for Run-2.





The legacy of the LHC results

data preservation

analysis preservation

- Data from high-energy physics experiments are collected with significant financial and human effort and are mostly unique.
- Besides the ongoing analyses that remain to be completed, these data may also provide important future scientific opportunities.

Data Preservation in High Energy Physics,
R. Kogler, D.M. South, M. Steder, arXiv:1111.2788

- It is of highest priority to our community to exploit fully the physics potential of the LHC. One aspect of this exploitation is the interpretation of LHC results in the contexts of different models of new physics.
- The tools needed [...] will require some dedicated efforts in terms of resources and manpower, to be supported by both the experimental and the theory communities.

Searches for New Physics: Les Houches Recommendations ....,
SK, B.C. Allanach, M. Mangano et al., arXiv:1203.2489

It is important for the legacy of the LHC that its experimental results can be used -now and in the future- by the whole high-energy physics community.

ATLAS has adopted RECAST

recast.perimeterinstitute.ca

RECAST [beta]

Home | Analyses Catalog | Requests | About | Developers | News | Help

Anyone can upload alternative signals in the LHE format and *request* that any given analysis is "recast" for their alternative model.

Experimentalists can accept the request, process these alternative signals with the full simulation, reconstruction, and analysis selection.

Latest Requests

Request	Analysis	Model	Status
1408.0043	Search for direct third-generation squark pair production in final states with missing transverse momentum and two b-jets in √s= 8 TeV pp collisions with the ATLAS detector	3-body decay of sbottom into b-quark and two invisible final states	Active
1408.0042	Search for direct top-squark pair production in final states with two leptons in pp collisions at sqrt(s)=8TeV with the ATLAS detector	3-body decay of stop into top and two invisible final states	Active
1408.0041	Search for direct pair production of the top squark in all-hadronic final states in proton-proton collisions at √s=8 TeV with the ATLAS detector	3-body decay of stop into top and two invisible final states	Active
1408.0040	Search for direct third-generation squark pair production in final states with missing transverse momentum and two b-jets in √s= 8 TeV pp collisions with the ATLAS detector	3-body decay of sbottom into b-quark and two invisible final states	Cancelled

None the less, theorists want -and need!- to do their own studies

question of time; include also CMS results; not everything merits full sim; ....

Interpretation tools

- Several groups have been developing their private codes for recasting BSM searches
- A number of public tools have become available recently

Fastsim

- CheckMATE confronts simulated events of any model to LHC results; currently has 8 ATLAS and 1 CMS SUSY analyses implemented [Drees et al., 1312.2591]

SMS

- SModelS decomposes the spectrum of any BSM scenario into SMS topologies, and compares it to the cross section upper limits from more than 50 ATLAS and CMS simplified-model results [SK et al., 1312.4175]

SMS

- Fastlim reconstructs the visible cross sections from pre-calculated efficiency tables and cross section tables for simplified event topologies, currently taking into account 11 ATLAS analyses [Papucci et al., 1402.0492]

SMS

- XQCAT determines the exclusion confidence level for heavy extra quarks based on efficiency maps, CMS search for top partners plus 2 SUSY searches at 8 TeV. [Barducci et al., 1405.0737]

- Moreover, several BSM searches are available within the RIVET framework (based on unfolded data)
  - ATOM calculates efficiencies based on RIVET toolkit [Kim et al, to appear?]

arXiv:1407.3278

Towards a public analysis database

We think it would be of great value for the whole community to have a database of LHC analyses based on fast simulation.

→ we propose to create such a database using the MadAnalysis 5 framework

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We think it would be of great value for the whole community to have a database of LHC analyses based on fast simulation.

→ we propose to create such a database using the MadAnalysis 5 framework

- Validated analysis codes, easy to check and to use for everybody.
- Can serve for the interpretation of the LHC results in a large variety of models.
- Convenient way of documentation; helps long-term preservation of the analyses performed by ATLAS and CMS.
- Modular approach, easy to extend, everybody who implements and validates an existing ATLAS or CMS analysis can publish it within this framework.
- Provides feedback to the experiments about documentation and use of their results. (The ease with which an experimental analysis can be implemented and validated may actually serve as a useful check for the experimental collaborations for the quality of their documentation.)

What is MadAnalysis 5 ?

E. Conte, B. Fuks, G. Serret, arXiv:1206.1599
E. Conte, B. Fuks, arXiv:1309.7831

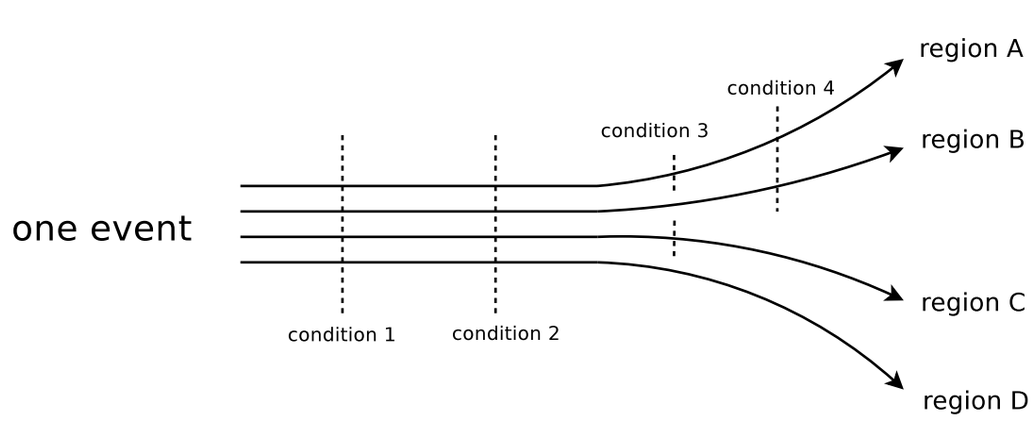
- Public framework for analyzing Monte Carlo events
- different levels of sophistication: partonic, hadronic, detector reconstructed
- input formats: StdHep, HepMC, LHE, LHCO, Delphes ROOT files
- user-friendly, flexible and fast
- normal mode: intuitive commands typed in the Python interface
  human-readable output: HTML and LaTeX
- expert mode: C++/ROOT programming within the SampleAnalyzer framework
- powerful tool, well-suited for phenomenological studies for particle colliders

https://madanalysis.irmp.ucl.ac.be

Recasting LHC analyses with MadAnalysis 5

E. Conte, B. Dumont, B. Fuks, C. Wymant
arXiv:1405.3982

- MadAnalysis 5 is a public user-friendly framework for analysing Monte Carlo events
- Recently extended for an efficient treatment of different signal regions in the same analysis
- New optimized handling of cuts and histograms



Conventional nesting of conditions is not efficient:

```
count the event in region D
if (condition 3)
{
  count the event in region C
  if (condition 4)
  {
    count the event in region A
  }
}
if (condition 4)
{
  count the event in region B
}
```

- Every cut is evaluated only once and applied to all relevant signal regions simultaneously

```
string SRForMet150Cut[] = {
  "Stop->b+chargino,LowDeltaM,MET>150",
  "Stop->b+chargino,HighDeltaM,MET>150",
Manager()->AddCut("MET>150GeV",SRForMet150Cut);
```

- Emulation of detector response using DELPHES 3

Analysis implementation and validation

1. Read and understand the experimental paper

2. Write the C++ analyzer code for MadAnalysis 5

reasonably **easy**

3. The difficult part: get missing information from the experimental collaboration.
   Needed, but not always publicly available, are:

   - efficiencies for trigger, electron, muons, b-tagging, event cleaning, ... } p_T dependence
   - treatment of ISR, jet energy scale
   - exact configuration of MC tools (versions, run card settings)
   - benchmark points: SLHA or LHE files
   - cut flows for the benchmark points
   - expected final number of events in each signal region

–essential–
but often quite difficult

4. Digitize the histograms from the experimental paper
   (stupid work; direct numerical form would be highly welcome → HepData, Twiki !)

5. Produce your own cut flows and histograms and compare,
   iterate until reasonable agreement is achieved

MadAnalysis 5 physics analysis database

Available Analyses

!! please properly cite all the re-implementation codes you are using (see Inspire citation entry) !!

ATLAS analyses, 8 TeV

Analysis	Short Description	Implemented by	Code	Validation note	Status
ATLAS-SUSY-2013-05 (published)	stop/sbottom search: 0 leptons + 2 b-jets	G. Chalons	Inspire	PDF (figures)	done
ATLAS-SUSY-2013-11 (published)	EWK-inos, 2 leptons + MET	B. Dumont	Inspire	PDF (source)	done

CMS analyses, 8 TeV

Analysis	Short Description	Implemented by	Code	Validation note	Status
CMS-SUS-13-011 (published)	stop search in the single lepton mode	B. Dumont, B. Fuks, C. Wymant	Inspire [1]	PDF (source)	done
CMS-SUS-13-012 (published)	gluino/squark search in jet multiplicity and missing energy	S. Bein, D. Sengupta	Inspire	PDF (source)	done
CMS-SUS-13-016 (PAS)	search for gluinos using OS dileptons and b-jets	D. Sengupta, S. Kulkarni	Inspire	PDF (source)	done

several more in preparation

Publication policy: submit to Inspire

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Information | Citations (0) | Files

MadAnalysis 5 implementation of CMS-SUS-13-011: search for stops in the single lepton final state at 8 TeV

Dumont, Beranger (LPSC, Grenoble); Fuks, Benjamin (CERN); Wymant, Chris (Annecy, LAPTH)

Description: This is the MadAnalysis 5 implementation of the CMS search for top-squark pair production in the single lepton final state with 19.5/fb at 8 TeV, to be used for re-interpretation studies. The C++ code contains extensive comments and can thus easily be used as a template for implementing other analyses.

Note: This analysis requires MINUIT libraries. Therefore, the line <LIBFLAGS += -lMinuit> should be added to the Makefile of the Build/ directory before compilation. More information how to use this code as well as a detailed validation summary are available at http://madanalysis.irmp.ucl.ac.be/wiki/PhysicsAnalysisDatabase

Cite as: Dumont, B., Fuks, B., Wymant, C. (2014) MadAnalysis 5 implementation of CMS-SUS-13-011: search for stops in the single lepton final state at 8 TeV. doi: 10.7484/INSPIREHEP.DATA.LR5T.2RR3

Record created 2014-06-19, last modified 2014-06-24

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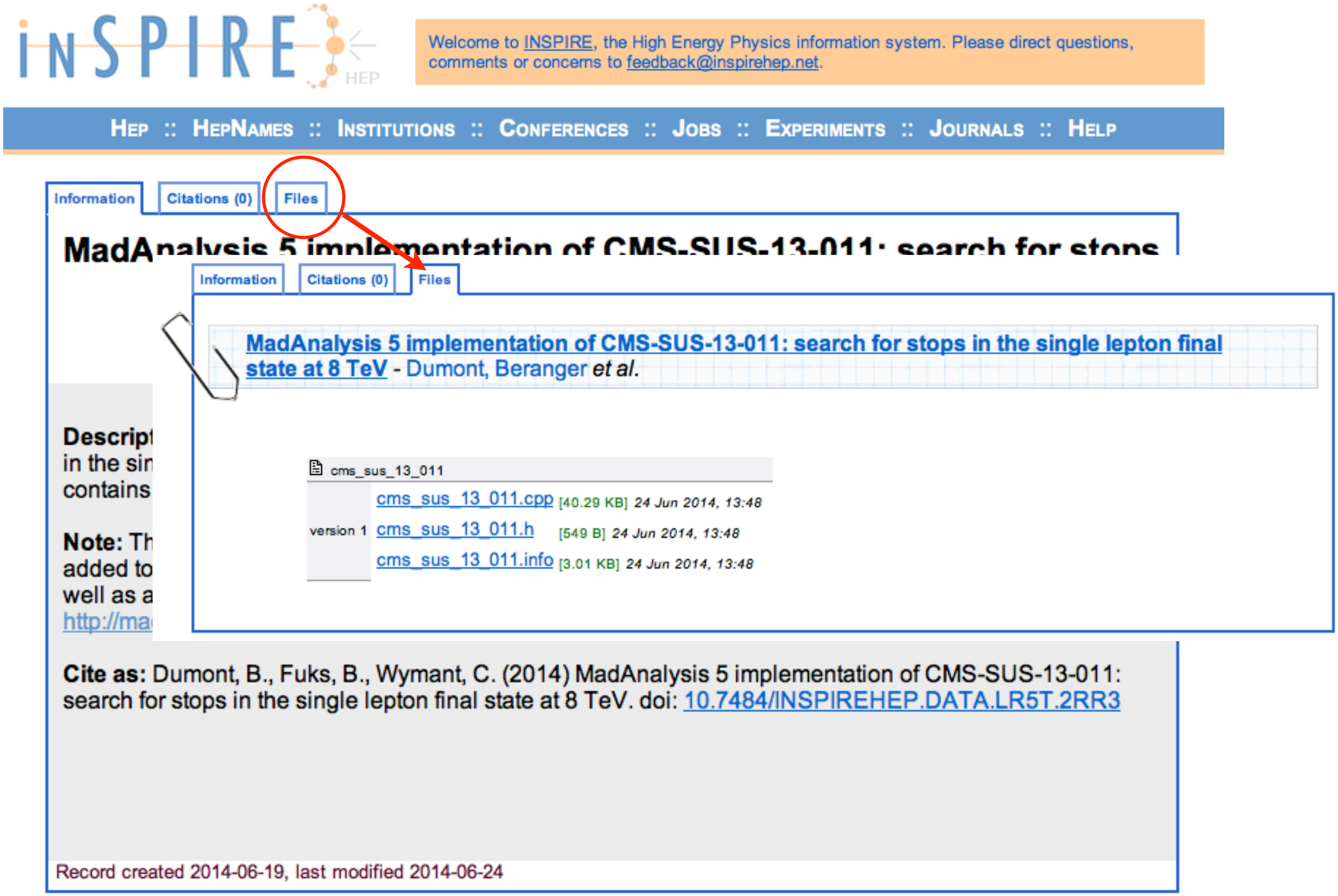

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MadAnalysis 5 implementation of ATLAS-SUSY-2013-05

Chalons, Guillaume (LPSC, Grenoble)

Description: This is the MadAnalysis 5 implementation of the ATLAS search for third-generation squarks in final states with 0-leptons and two b -jets, with 20.1/fb at 8 TeV, to be used for re-interpretation studies.

Note: Information how to use this code as well as a detailed validation summary are available at http://madanalysis.irmp.ucl.ac.be/wiki/PhysicsAnalysisDatabase

Cite as: Chalons, G. (2014) MadAnalysis 5 implementation of ATLAS-SUSY-2013-05. doi: 10.7484/INSPIREHEP.DATA.Z4ML.3W67

Record created 2014-06-24, last modified 2014-06-24

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each recasted analysis gets a DOI (digital document identifier)
and is individually searchable and citable

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Export
BibTeX, EndNote, LaTeX(US), LaTeX(EU), Harvmac, MARC, MARCXML, NLM, DC

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Implementation & validation of ATLAS analyses

Published | Problems with the validation | Starting validation (not covered here)

1. ATLAS-SUS-2013-04 (1308.1841): multijet + missing energy
   [Blanke, BF, Galon]
2. ATLAS-SUS-2013-05 (1308.2631): two b-jets + missing energy
   [Chalons]
3. ATLAS-SUS-2013-11 (1403.5294): two leptons + missing energy
   [Dumont]
4. ATLAS-SUS-2013-12 (1402.7029): three leptons + missing energy
   [de Causmaecker, BF, Mawatari]
5. ATLAS-SUS-2013-13 (1405.5086): at least four leptons + missing energy
   [Mawatari]
6. ATLAS-SUS-2013-14 (1407.0350): two hadronic taus + missing energy
   [de Causmaecker, BF]
7. ATLAS-SUS-2013-18 (1403.4853): at least three b-jets + missing energy
   [Mitzka, BF]
8. ATLAS-SUS-2013-19 (1407.0600): two leptons + b-jet(s) + missing energy
   [Chalons]

ATLAS-SUS-2013-05: two b-jets + missing energy

[Chalons]

✦ Description of the analysis

✤ Two simplified models investigated:

★ SMS-A: sbottom pair production, with each sbottom decaying into a b-jet and a neutralino

★ SMS-B: stop pair production, with each stop decaying into an invisible chargino (compressed spectrum) and a b-jet

✤ Two signal regions:

★ SRA (*cf.* SMS-A): 2 hard b-jets + missing energy + requirements on the di-bjet system

★ SRB: (*cf.* SMS-B): 1 hard ISR jet + 2 softer b-jets + missing energy + requirement on hadronic variables

✦ Good agreement between ATLAS and MADANALYSIS 5

SRA

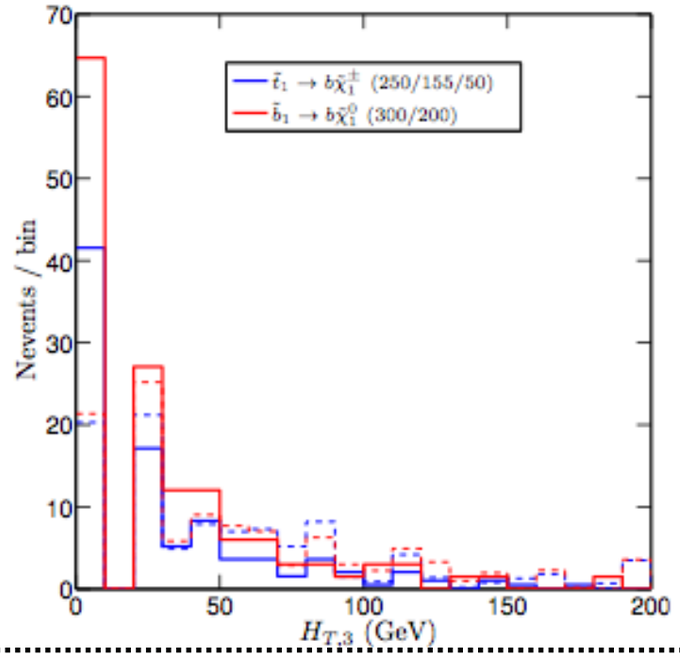
cut	$m_{\tilde{b}_1} = 500$ GeV ATLAS result	$m_{\tilde{b}_1} = 500$ GeV MA 5 result	$m_{\tilde{t}_1} = 500$ GeV ATLAS result	$m_{\tilde{t}_1} = 500$ GeV MA5 result
$E_T^{\rm miss} > 80$ GeV filter	1606.0	1628.2	1632.0	1585.2
+ Lepton veto	1505.0	1223.5	1061.0	863.2
+ $E_T^{\rm miss} > 150$ GeV	1323.0	1052.2	859.0	696.3
+ Jet Selection	119.0	142.3	39.0	47.6
+ $M_{bb} > 200$ GeV	96.0	116.5	32.0	38.8
+ $M_{CT} > 150$ GeV	82.0	97.5	26.8	31.7
+ $M_{CT} > 200$ GeV	67.0	80.7	20.2	24.5
+ $M_{CT} > 250$ GeV	51.0	60.8	13.2	16.6
+ $M_{CT} > 300$ GeV	35.0	42.3	7.7	9.2

SRB

cut	$m_{\tilde{b}_1} = 350$ GeV ATLAS result	$m_{\tilde{b}_1} = 350$ GeV MA 5 result	$m_{\tilde{t}_1} = 500$ GeV ATLAS result	$m_{\tilde{t}_1} = 500$ GeV MA5 result
$E_T^{\rm miss} > 80$ GeV filter	6221.0	5963.7	1329.0	1117.9
+ Lepton veto	4069.0	4450.4	669.0	702.9
+ $E_T^{\rm miss} > 250$ GeV	757.0	724.5	93.0	86.8
+ Jet Selection	7.9	7.5	6.2	5.7
+ $H_{T,3} < 50$ GeV	5.2	6.6	3.0	4.6

✤ Larger differences in the lepton veto

✤ Possible problems with SRB (too much jet activity at low p_T)



ATLAS-SUS-2013-11: two leptons + missing energy

[Dumont]

✦ Description of the analysis

✤ Search for electroweakinos decaying into two leptons and missing energy

✤ Three series of signal regions:

★ WW: Z and jet veto + missing energy + requirement on the dilepton system

★ Zjets: two light jets + Z window + requirement on the dilepton system

★ MT2: Z and jet veto + M_{T2} + requirement on the dilepton system

✦ Good agreement between ATLAS and MADANALYSIS 5

WWa-ee

cut	ATLAS result	MA5 result
Initial number of events		12301.5
2 OS leptons		1520.8
$m_{\ell\ell} > 20$ GeV		1497.8
τ veto		1497.8
ee leptons	402.1	392.9
jet veto	198.6	257.3
Z veto	165.0	216.0
$p_{T,\ell\ell} > 80$ GeV	28.0	35.3
$E_T^{\mathrm{miss,rel}} > 80$ GeV	14.7	18.9
$m_{\ell\ell} < 120$ GeV	9.2	10.1

Zjets-μμ

cut	ATLAS result	MA5 result
Initial number of events		152.2
2 OS leptons		46.9
$m_{\ell\ell} > 20$ GeV		46.9
τ veto		46.9
$\mu\mu$ leptons	16.4	24.2
≥ 2 central light jets	13.2	15.4
b and forward jet veto	9.5	12.4
Z window	9.1	11.6
$p_{T,\ell\ell} > 80$ GeV	8.0	10.1
$E_T^{\mathrm{miss,rel}} > 80$ GeV	5.1	7.0
$0.3 < \Delta R_{\ell\ell} < 1.5$	4.2	5.9
$50 < m_{jj} < 100$ GeV	2.7	3.6
$p_T(j_1, j_2) > 45$ GeV	1.8	1.6

However…

✤ Larger differences in the jet selections

✤ Larger differences in the preselection (for some of the SRs)

MT2-120-ee

cut	ATLAS result	MA5 result
Initial number of events		96.8
2 OS leptons		65.0
$m_{\ell\ell} > 20$ GeV		64.8
τ veto		64.8
ee leptons	51.2	32.1
jet veto	19.4	17.4
Z veto	18.7	16.9
$m_{T2} > 120$ GeV	9.1	8.2

ATLAS-SUS-2013-12: three leptons + missing energy

[de Causmaecker, BF, Mawatari]

✦ Description of the analysis

✤ Search for electroweakinos decaying into three leptons and missing energy

✤ Five series of signal regions according to the number of taus (from 0 to 2):

★ 0tau-a: 1 OSSF lepton pair; 20 bins defined by the OSSF invariant mass, $M_T(3^{rd}$ lepton, met), met, Z veto

★ 0tau-b: low met + 0 OSSF + configuration of the three leptons

★ 1tau + 2 SS leptons: looking for a Higgs into tau decay

★ 2 tau-a: low met + m_{T2}

★ 2 tau-b: 1 OS tau-pair targeting Higgs into tau decays + requirement on the ditau system

✦ Some SRs OK, but huge discrepancies in others, e.g. :

cut [2tau-a]	our nev	exp events
Initial number of events	4384.8	4384.8
triggers	0.0	-
dR(leptons) > 0.3	0.0	-
3 signal leptons	0.0	-
1 electron or muon	0.0	-
two taus	0.0	48.0
b jet veto	0.0	46.0
etmiss > 50	0.0	35.0
mt2 max > 100	0.0	14.0

cut [2tau-b]	our nev	exp events
Initial number of events	28033.7	28033.7
triggers	13293.6	-
dR(leptons) > 0.3	13178.6	-
3 signal leptons	934.9	-
1 electron or muon	934.9	-
two taus	194.8	-
two os taus	193.4	34.0
b jet veto	193.4	33.0
etmiss > 60	72.9	14.0
70 < mtt < 120	51.9	10.0
sum tau pt > 110	29.4	5.0

cut [1tau]	our nev	exp events
Initial number of events	21157.5	21157.5
triggers	10215.9	-
dR(leptons) > 0.3	10130.2	-
3 signal leptons	735.2	-
1 electron or muon	735.2	-
one tau	87.8	-
two ss leptons	26.4	23.0
mee z veto	26.4	22.0
b jet veto	26.4	21.0
etmiss > 50	19.0	14.0
sum lepton pt > 70	7.4	10.0
2nd lepton pt > 30	5.3	6.0
mlt < 120	5.3	6.0

✤ Clear problems with the preselection (triggers ⇔ lepton reconstruction?)

✤ No idea how good is the simulation of taus

✤ Maybe something with the b-tagging

ATLAS-SUS-2013-14: two taus + missing energy

[de Causmaecker, BF]

✦ Description of the analysis

✤ Search for electroweakinos decaying into two taus and missing energy

✤ Four signal regions:

★ C1C1: 1 OS tau pair, no lepton/Z/jet, m_{T2}, tau properties
★ C1N2: at least 2 taus with1 OS pair, no lepton/b/Z,m_{T2}, missing energy
★ DFS-HM: 1 OS tau pair, no lepton/Z/jet, m_{T2}, m_{eff}, tau properties
★ DS-LM: 1 OS tau pair, no lepton/Z/jet, m_{T2}, m_{eff}, tau properties

✦ Lots of problems

C1C1

cut	sim events	exp events
Initial number of events	8473.0	29500.0
at least two leptons	1502.0	1499.1
at least two taus and e/mu veto	264.0	352.5
ditau trigger	224.0	175.6
exactly 2 os taus, jet/z-veto	7.0	22.4
mt2 $>$ 30 gev	2.0	16.1
mttau1 + mttau2 $>$ 250 gev	0.0	8.5

DS-LM

cut	sim events	exp events
Initial number of events	30000.0	29500.0
at least two leptons	4630.0	1499.1
at least two taus and e/mu veto	806.0	352.5
ditau trigger	576.0	175.6
exactly 2 os taus, looser jet/z-veto	24.0	51.5
deltar $<$ 3, mt2 $>$ 30 gev	7.0	53.6
meff $>$ 250 gev	1.0	7.5

✤ Clear problems with the lepton identification
✤ No idea how good is the simulation of taus
✤ Problems with the simulated samples
(maybe solved; more time is needed)

ATLAS-SUS-2013-19: 2 leptons, b-jets + MET

[Chalons]

✦ Description of the analysis

✤ Search for stops decaying into two leptons, b-jets and missing energy

✤ Two 'hadronic' (H160) and four 'leptonic' (L90, L100, L110, L120) signal regions with extra SF/DF distinction

★ Hadronic: 1 pair of OS not too hard leptons + 2 b-jets + M_{T2} requirements

★ Leptonic 1 pair of OS (off-Z) leptons + 2 b-jets + M_{T2} requirements + jet requirements

✦ Important problems

cut [L90-SF]	# events (scaled to 100000.0)	# events (official)
Initial number of events	100000.0	
Two 10 GeV SF preselected leptons	4147.5	3390.0
lepton isolation	1053.2	2625.0
opposite sign leptons	1053.2	2582.0
$m_{ll} > 20$ GeV	1030.5	2532.0
Trigger lepton p_T requirement	1018.0	2439.9
Z veto	740.1	1731.5
$\Delta\phi > 1$	413.5	928.9
$\Delta\phi_b < 1.5$	403.7	901.9
$m_{T2} > 90$ GeV	19.6	58.0

cut [H160-DF]	# events (scaled to 100000.0)	# events (official)
Initial number of events	100000.0	
Two 10 GeV DF preselected leptons	4112.7	6125.8
lepton isolation	1004.5	4857.8
$m_{ll} > 20$ GeV	952.8	4726.3
opposite sign leptons	952.8	4670.6
Trigger lepton p_T requirement	916.4	2470.4
2 b-jets	348.1	893.5
$m_{T2}^{\mathrm{b-jet}} > 160$ GeV	47.7	137.7
$m_{T2} < 90$ GeV	45.3	135.0
leading lepton $p_T < 60$ GeV	11.4	58.2

Clear problems with the lepton identification (preselection + isolation)

Summary of the problems + suggestions

✦ Lepton identification

✤ The isolation seems the obvious property to further investigate first

★ Suggestion 1 : p p →Z → $l^+ l^-$ samples with varying m_Z (to probe different lepton p_T)

★ Suggestion 2 : p p →Z +1 jet→ $l^+ l^-$ samples with varying m_Z (to probe different lepton p_T)

✦ Validation of the tau simulation

✤ Electroweakino searches in ATLAS-SUS-2013-12 and in ATLAS-SUS-2013-14

★ Suggestion 1: a bunch of p p →Z → $\tau^+ \tau^-$ samples with varying m_Z (to probe different lepton p_T)

★ Suggestion 2: a bunch of p p →Z → $\tau^+ \tau^-$ + 1 j samples with varying m_Z (to probe different lepton p_T)

✦ Pile-up effects, p_T-dependent JES, *etc.*

✤ Hadronic activity in ATLAS-SUS-2013-05 and jet selections in ATLAS-SUS-2013-11

★ Suggestion: a bunch of multijet samples with various m_{jj} cuts (2 and 3 hard jets)

✦ If agreement: sample generation with MADGRAPH+PYTHIA (no merging) with simple cuts

✤ Either us or ATLAS could generate common LHE samples

✤ ATLAS people are taking care of roducing official cutflows

✤ We take care of the DELPHES + MADANALYSIS cutflows

✤ We compare

Note: this is how we are proceeding with CMS, and it works very well

Wish / check list — what is needed for each analysis

Implementation

- ☐ Clear description of all the cuts, incl. their sequence
- ☐ Efficiencies for physics objects: electrons, muons, taus, b-tagging, mis-tagging, ...
- ☐ Efficiencies for "triggers", event cleaning, ...
  (everything we cannot directly reproduce in the fastsim)

if some efficiency is not given explicitly, please always provide a clear reference to where to find it !!

Validation

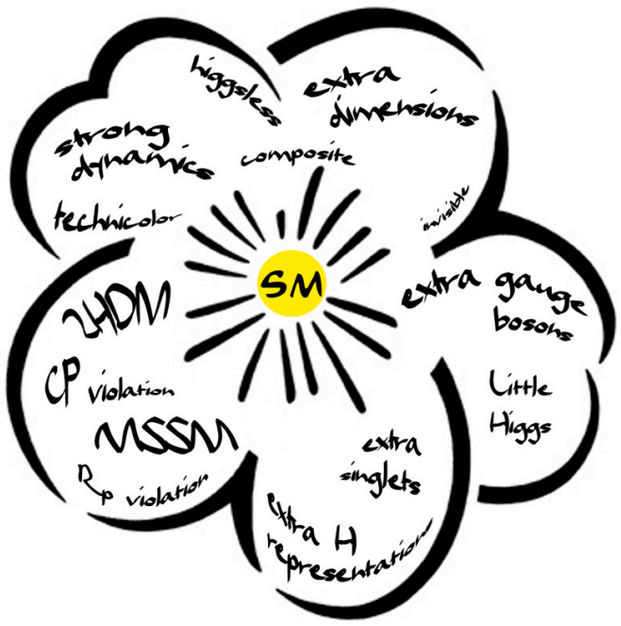
- ☐ Clearly defined benchmark points for all SRs: SLHA or LHE files
- ☐ Exact configuration of MC tools (versions, run card settings, input scripts)
- ☐ Detailed cut flows for the benchmark points, best incl. every step of (pre)selection
- ☐ Plots of kinematic distributions after specific cuts

Conclusions

- We propose to create a public database of LHC analyses for BSM searches using the MadAnalysis 5 framework
- C++ analysis codes published individually via INSPIRE → each implementation obtains a digital objet identifier (DOI) and is individually citable.
- Open Source and Open Access approach

  Everybody -experimentalists as well as theorists- welcome to contribute his/her recast code!
- It is important for the legacy of the LHC that its experimental results can be used by the whole HEP community. We hope that our project contributes to this aim.
- However, this can only succeed if more information is provided by the experimental collaborations on their analyses. We plea for a more open communication and exchange of information between EXP and TH/users.

  Some CMS people are helping us with CMS analyses or even directly implementing CMS analyses themselves. It would be great to have similar support from ATLAS !



Mini-workshop on recasting ATLAS and CMS new physics searches

chaired by Sabine Kraml (LPSC)

from Monday, 8 September 2014 at **10:00** to Friday, 12 September 2014 at **14:00** (Europe/Paris)
at **LPSC Grenoble**

Description This is an informal meeting of people working on interpretation tools for LHC new physics searches. The main purpose is to compare different approaches and to discuss experiences, problems and solutions for implementing+validating ATLAS and CMS analyses in recast codes. A certain focus will be on questions related to fast detector simulation.

Partial funding by ENIGMASS is gratefully acknowledged.

IMPORTANT: new access to LPSC by tram and bus.

Participants Guillaume Chalons; Eric Conte; Béranger Dumont; Benjamin Fuks; Ian-Woo Kim; Sabine Kraml; Kazuki Sakurai; Daniel Schmeier; Dipan Sengupta; Jamie Tattersall

- It would be extremely valuable if some analyzers from ATLAS could participate in the meeting
- Opportunity to solve some of the problems mentioned in this talk
- Grenoble is just 2 hrs from CERN, please come

https://lpsc.in2p3.fr/Indico/conferenceDisplay.py?confId=1085