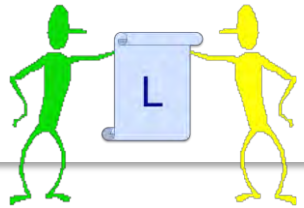
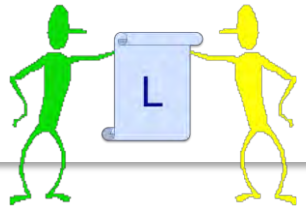


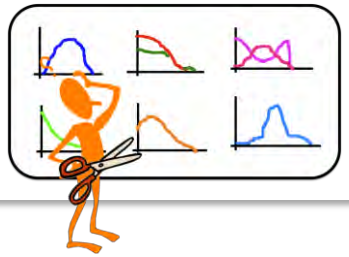
Interpretation of experimental results

Recommendation 4: *In the interpretation of experimental results, preferably provide the final likelihood function (following Recommendations 3b/3c). When this is not possible or desirable, provide a grid of confidence levels over the parameter space. The expected constraints should be given in addition to the observed ones, and whatever sensitivity measure is applied must be precisely defined. Modeling of the acceptance needs to be precisely described.*



Higgs searches

Recommendation 5: *For Higgs searches, provide all relevant information on a channel-by-channel basis for both production and decay processes.*



Exclusive analysis design

Recommendation 6: *When relevant, design analyses and signal regions that are based on disjoint sets of events.*

AAD 2011 — Search for supersymmetry using final states with one lepton, jets, and missing transverse momentum with the ATLAS detector in sqrt{s} = 7 TeV pp

HEPDATA

Experiment: CERN-LHC-ATLAS (ATLAS)
Published in PRL 106,131802
Preprinted as CERN-PH-EP-2011-013
Archived as: ARXIV:1102.2357
Record in: INSPIRE

CERN-LHC. Search for SUSY in final states containing one isolated lepton (electron or muon), jets and missing transverse momentum in proton-proton collisions at a centre-of-mass energy of 7 TeV. The data sample, collected during 2010, has a total integrated luminosity of 35 pb-1. No excess above the standard model is found. This record contains the distributions in missin ET, the transverse mass (MT) between the lepton and the missing transver momentum vector, and the effective mass defined as the scalar sum of the the three leading jets, the pT of the lepton and the missing ET. Also tabulated are the 95 PCT exclusion limits on m_0 and m_(1/2) for the MSUGRA/CMSSM model.

Link to the tables of MSUGRA/CMSSM SLHA parameters
Link to the combined 0 and 1 lepton analysis

View list of currently selected plots

Table 1
as: plain text, AIDA, PyROOT, YODA, ROOT, mpl or jhepwork

Distribution of ET(C=MISSING) IN GEV for data and background MC calcu
Location: F 1

ATLAS MSSM_sqgl Spring 2011 shla data files

MSSM_sqgl	g-mass														
s-mass	0050	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1200	1400	1600	1800	2000
0050	y	y	y	y	y	y	y	y	y	y	y					
0100	y	y	y	y	y	y	y	y	y	y	y					
0200	y	y	y	y	y	y	y	y	y	y	y					
0300	y	y	y	y	y	y	y	y	y	y	y					
0400	y	y	y	y	y	y	y	y	y	y	y					
0500	y	y	y	y	y	y	y	y	y	y	y					
0600	y	y	y	y	y	y	y	y	y	y	y					
0700	y	y	y	y	y	y	y	y	y	y	y					
0800	y	y	y	y	y	y	y	y	y	y	y					
0900	y	y	y	y	y	y	y	y	y	y	y					
1000	y	y	y	y	y	y	y	y	y	y	y					
1200		y	y	y	y		y		y							
1400	y	y	y	y	y		y									
1600		y	y	y	y		y		y							
1800		y	y	y	y		y		y							
2000	y	y	y	y	y		y									

efficiency'acceptance information: sqgl_0lgrid_HEPdata.txt
gzipped tar file of all data files: MSSM_sqgl.tar.gz
uuencoded version of above: MSSM_sqgl.uu

SLHA file

Expected # signal events Acceptance * efficiency

. : DATA	. : BACKGROUND
ABS(ETARAP(C=ELECTRON)) : < 2.47 - (1.37 TO 1.52)	
ABS(ETARAP(C=JET)) : < 2.50	
ABS(ETARAP(C=MUON)) : < 2.40	
PT(C=JET) : > 30 GeV	
PT(C=LEADING JET) : > 60 GeV	
PT(C=LEPTON) : > 20 GeV	
RE : P P --> LEPTON .GE.3JETS MM	
SQRT(S) : 7000.0 GeV	

ET(C=MISSING) IN GEV	N	
0 - 10.	332 +19.1,-18.1 (stat)	236 ± 53.2 (stat) +39.9,-36.3 (sys)
10 - 20.	730 +27.9,-26.9 (stat)	712.9 ± 146.0 (stat) +156.2,-0.0 (sys)
20 - 30.	716.0 +27.6,-26.6 (stat)	678.7 ± 166.3 (stat) +0.0,-201.7 (sys)

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Information | References (55) | Citations (204) | Plots | HepData

Search for squarks and gluinos using final states with jets and missing transverse momentum with the ATLAS detector in $\sqrt{s} = 7$ TeV proton-proton collisions.

ATLAS Collaboration (Georges Aad (Freiburg U.) *et al.*) Show all 3024 authors.

Add-ons: functions, code snippets, etc.
Citable information permanent like the publication itself

Sep 2011 - 9 pages

Phys.Lett. B710 (2012) 67-85
DOI: 10.1016/j.physletb.2012.02.051
CERN-PH-EP-2011-145
e-Print: arXiv:1109.6572 [hep-ex] | PDF
Experiment: CERN-LHC-ATLAS

Abstract: A search for squarks and gluinos in events containing jets, missing transverse momentum and no electrons or muons is presented. The data were recorded in 2011 by the ATLAS experiment in sqrt(s) = 7 TeV proton-proton collisions at the Large Hadron Collider. No excess above the Standard Model background expectation is observed in 1.04 fb^-1 of data. Gluino and squark masses below 700 GeV and 875 GeV respectively are excluded at the 95% confidence level in simplified models containing only squarks of the first two generations, a gluino octet and a massless neutralino. The exclusion limit increases to 1075 GeV for squarks and gluinos of equal mass. In MSUGRA/CMSSM models with tan(beta)=10, A_0=0 and mu> 0, squarks and gluinos of equal mass are excluded for masses below 950 GeV. These limits extend the region of supersymmetric parameter space excluded by previous measurements.

Note: 9 pages plus author list (20 pages total). 2 figures, 3 tables, matches published version in Physics Letters B

Conclusions

- In order to fully exploit the LHC physics potential, we need
  - to be able to (re-)interpret LHC data in the contexts of the broadest possible range of theoretical scenarios (cf. Les Houches recommendations)
  - a comprehensive approach to the storage, persistence and future use of LHC results.
- Work towards a common standard for presentation/preservation of results.
- Added value for the experiments, and the community as a whole:
  - faster and more precise feedback on the implications of the LHC results.
  - greatly facilitate the comparison and combination of analyses within and across the LHC collaborations, as well as the assessment of the physics potential of future facilities.
  - possibility to re-assess results in view of new discoveries.
- The tools needed to provide extended experimental information will require some dedicated efforts in terms of resources and manpower, to be supported by both the experimental and the theory communities.