INSPIRE and "data"

Sünje Dallmeier-Tiessen (CERN)

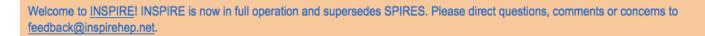
and

Zaven Akopov (Desy)

for the INSPIRE collaboration

sunje.dallmeier-tiessen@cern.ch







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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.

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

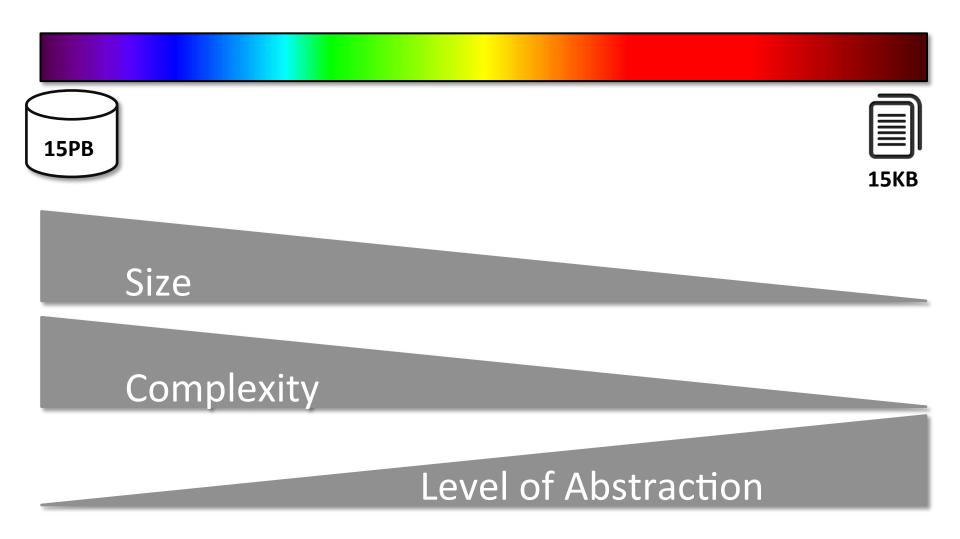
Abstract: A search for squarks and gluinos in events containing jets, missing transverse momentum and no electrons or muons is presented. The data were recorded in 2011 by the ATLAS experiment in sqrt(s) = 7 TeV protonproton collisions at the Large Hadron Collider. No excess above the Standard Model 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



More than publications....

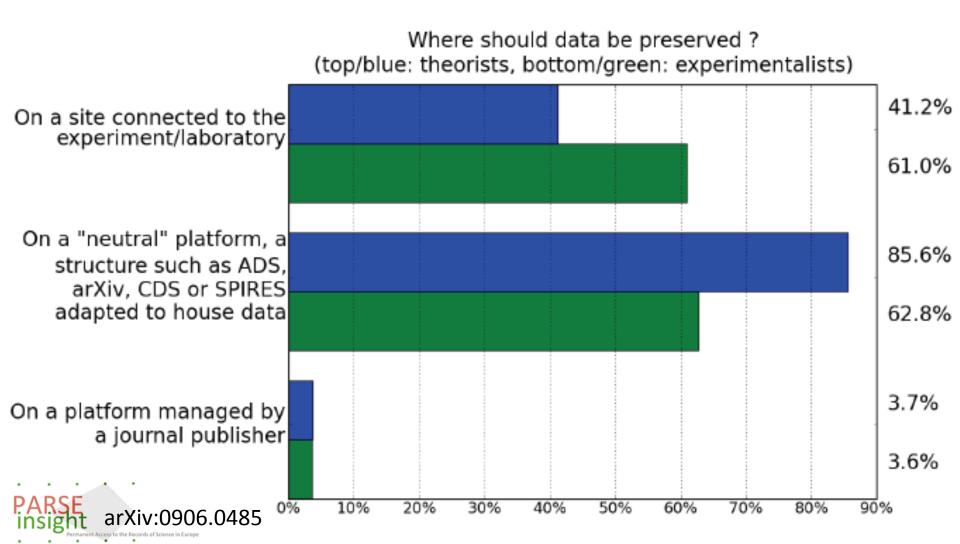
Spectrum of Research Data in HEP



DPHEP tiers

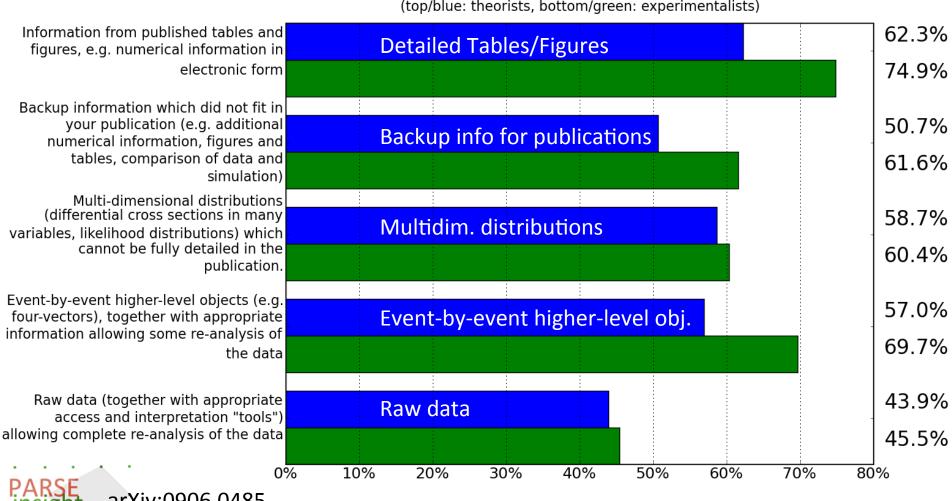
Preservation Model	Use case
Provide additional documentation	Publication-related information search
2. Preserve the data in a simplified format	Outreach, simple training analyses
3. Preserve the analysis level software and data format	Full scientific analysis based on existing reconstruction
4. Preserve the reconstruction and simulation software and basic level data	Full potential of the experimental data

What HEP researchers told us:



In more detail:

At what level of detail should data be preserved? (top/blue: theorists, bottom/green: experimentalists)





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CERN-PH-EP-2011-145

e-Print: arXiv:1109.6572 [hep-ex] | PDF Experiment: CERN-LHC-ATLAS

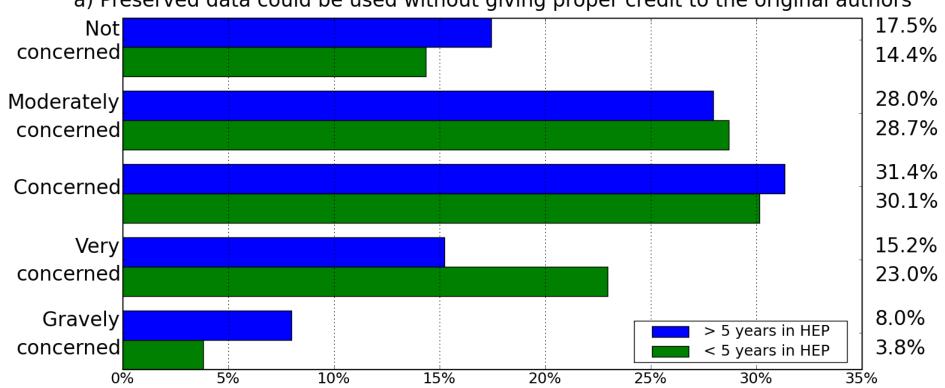
Abstract: A search for squarks and gluinos in events containing jets, missing transverse momentum and no electrons or muons is presented. The data were recorded in 2011 by the ATLAS experiment in sqrt(s) = 7 TeV protonproton collisions at the Large Hadron Collider. No excess above the Standard Model 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.

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To what extent are you concerned about the following issues related to giving access to preserved data?

a) Preserved data could be used without giving proper credit to the original authors

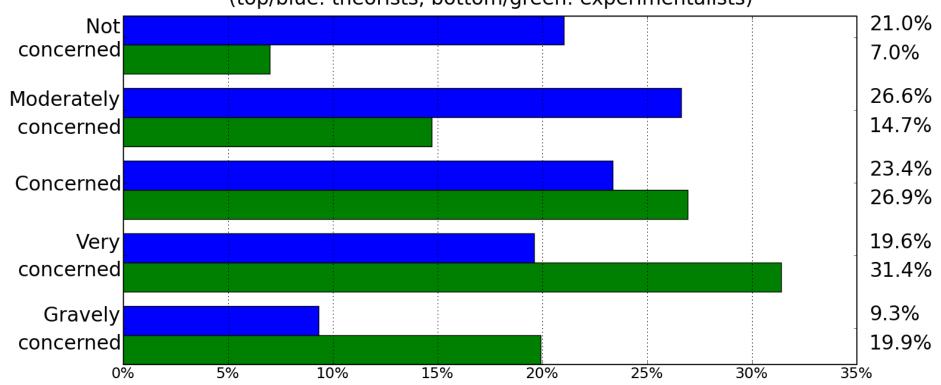




Worries: inflation/noise

To what extent are you concerned about the following issues related to giving access to preserved data?

b) Uncontrolled access to data may lead to an inflation of incorrect results (top/blue: theorists, bottom/green: experimentalists)

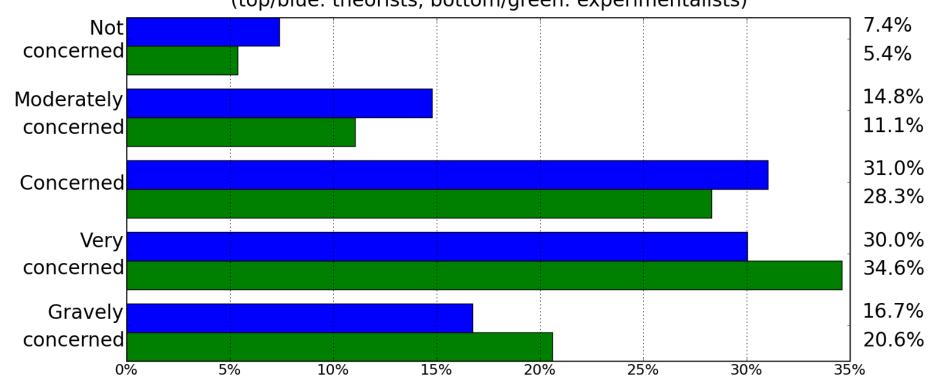




Worries: documentation

If you were to re-use preserved data, to what extent would you be concerned by the following scenarios?

d) I am not using the data correctly (top/blue: theorists, bottom/green: experimentalists)





Our Past

Connecting publications and HEPData...





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Plots

Measurement of the Strange B Meson Production Cross Section with J/Psi phi Decays in pp Collisions at sqrt(s) = 7 TeV.

CMS Collaboration (Serguei Chatrchyan et al.) Show all 2194 authors.

Jun 2011 mult. pp.

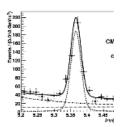
Phys.Rev. D84 (2011) 052008 CMS-BPH-10-013,CERN-PH-EP-2011-063 e-Print: arXiv:1106.4048 [hep-ex]

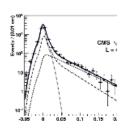
Abstract: The B^0_s differential production cross section is measured as functions of the transverse momentum and rapidity in pp collisions at sqrt(s) = 7 TeV, using the J/Psi phi decay, and compared with predictions based on perturbative QCD calculations at next-to-leading order. The data sample, collected by the CMS experiment at the LHC, corresponds to an integrated luminosity of 40 inverse picobarns. The B^0_s is reconstructed from the decays J/Psi to an oppositely charged muon pair and phi to K+ K-. The integrated B^0_s cross section times B^0_s to J/Psi phi branching fraction in the range 8 < pt(B) < 50 GeV/c and |y(b)| < 2.4 is measured to be 6.9 +/- 0.6 +/- 0.6 nb, where the first uncertainty is statistical and the second is systematic.

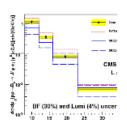
Keyword(s): INSPIRE: B/s0: hadroproduction | p.p: interaction | B/s0: hadronic decay | J/psi(3100): leptonic decay | Phi(1020): hadronic decay | differential cross section: transverse momentum | rapidity dependence | quantum chromodynamics: perturbation theory | higher-order: 1 | channel cross section: branching ratio: measured | CERN LHC Coll | experimental results | CMS | B/s0 --> J/psi(3100) Phi(1020) | J/psi(3100) --> muon+ muon- | Phi(1020) --> K+ K- | 7000 GeV-cms

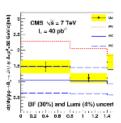
Keyword(s): INSPIRE: B/s0: hadroproduction | p p: interaction | B/s0: hadronic decay | J/psi(3100): leptonic decay | Phi(1020): hadronic decay | differential cross section: transverse momentum | rapidity dependence | quantum chromodynamics: perturbation theory | higher-order: 1 | channel cross section: branching ratio: measured | CERN LHC Coll | experimental results | CMS | B/s0 --> J/psi(3100) Phi(1020) | J/psi(3100) --> muon+ muon- | Phi(1020) --> K+ K- | 7000 GeV-cms

Note: * Temporary entry *









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CHATRCHYAN 2011 — Measurement of the Strange B Meson Production Cross Section with J/Psi phi Decays in pp Collisions at sqrt(s) = 7 TeV

Experiment: CERN-LHC-CMS (CMS)

Published in PR D84,052008

Preprinted as CERN-PH-EP-2011-063

Archived as: ARXIV:1106.4048

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CERN-LHC. Measurement of the total cross section and differential cross sections as functions of transverse momentum and rapidity for B/S strange mesons produced in proton-proton collisions at a centre-of-mass energy of 7 TeV. The cross sections are given uncorrected for the B/S <J/PSI PHI> decay using J/PSI <MLI+ MLI> and PHI

Where we are now

Bringing together INSPIRE and HEPdata

Trustworthy "data" workflows with INSPIRE



Data generation

Data processing

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Plots

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

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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 protonproton 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

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\	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 (Aad, Georges et al.) Phys.Lett. B710 (2012) 67-85 arXiv:1109.6572 [hep-ex] CERN-PH-EP-2011-145								
	THIS DATA COMES FROM THE DURHAM HEPDATA PROJECT								
	SUMMARY:								
	Comments: The distribution in Meff (scalar sum of the missing transverse momentum and the transverse momenta of the two highest pT jets) for events with at least 2 jets after the application of all selection criteria (other than the Meff cut itself). The table shows the number of observed data points per 100 GeV bin plus the background prediction of the Standard-Model Monte-Carlo and its upper and lower 1-sigma error limits uncertainty band								
	Go to the record								
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	$ET_{MM} > 130 GeV$								
	$\begin{array}{c} M_{EFFECTIVE} > 1000 GeV \\ \hline p_{Tjet} > 40 GeV \end{array}$								
	$p_{TLEADING jet} > 130 GeV$								
	$p p \to 0l \ge 2JETS MM$ $\sqrt{s} = 7000.0 \ GeV$								

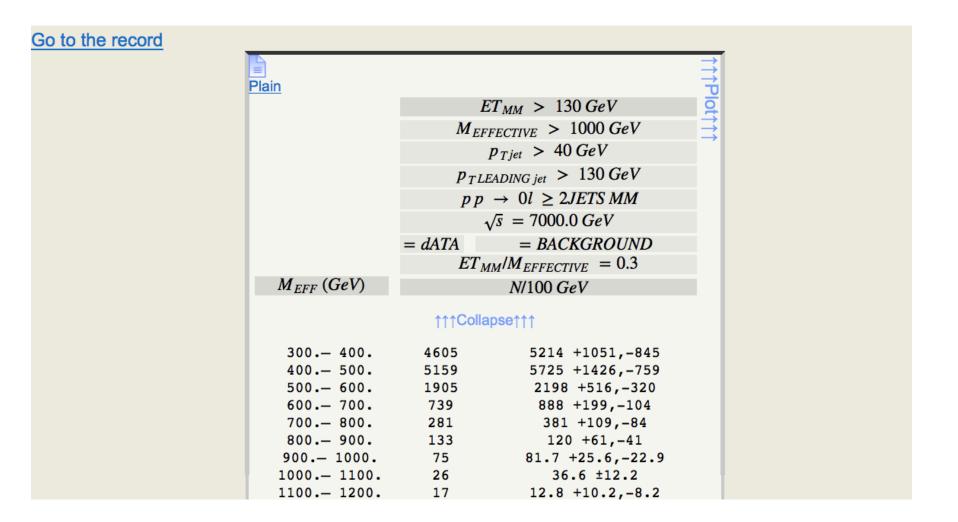
 $ET_{MM}/M_{EFFECTIVE} = 0.3$

N/100 GeV

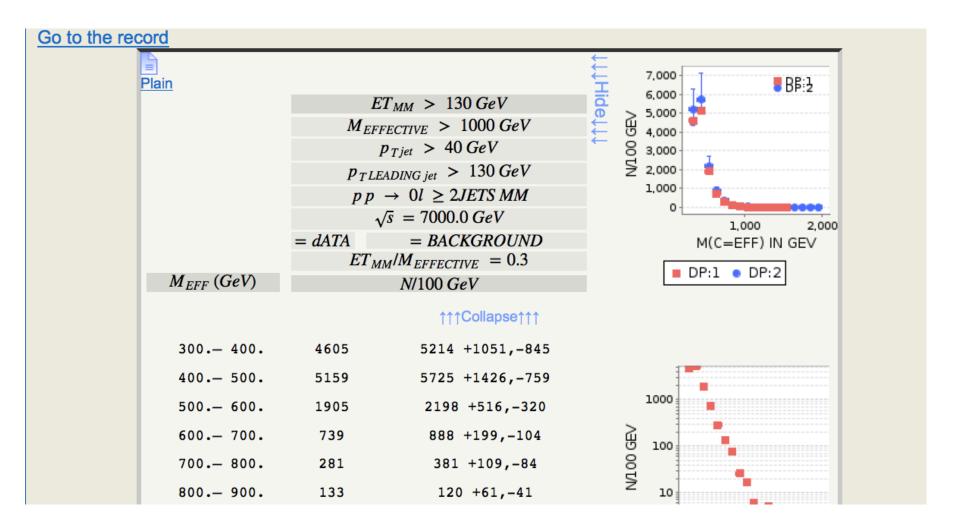
 M_{EFF} (GeV)

19

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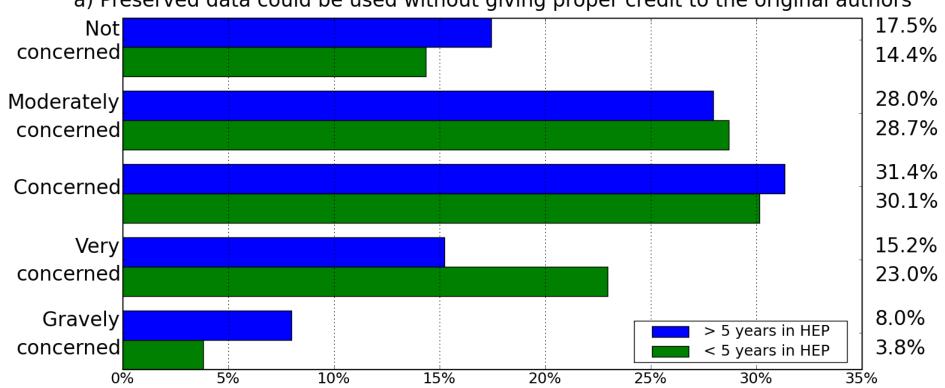
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Information References Citations Files **Plots** Observation of Long-Range Near-Side Angular Correlations in Proton-Proton Collisions at the LHC - CMS Collaboration (Khachatryan, Vardan et al.) JHEP 1009 (2010) 091 arXiv:1009.4122 [hep-ex] CMS-QCD-10-002, CERN-PH-EP-2010-031 JHEP file(s): JHEP-1009-2010-091 version 1 JHEP-1009-2010-091.pdf [781.98 KB] 02 Dec 2010, 16:17 Supplementary Material file(s): CMS-QCD-10-002 version 1 CMS-QCD-10-002.mat.txt [9.07 KB] 01 Dec 2010, 18:57 Additional data-tables for the figures. arXiv file(s): arXiv:1009.4122 version 2 arXiv:1009.4122.pdf [787.15 KB] 29 Aug 2012, 11:33 (see previous)

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Observation of Long-Range Near-Side Angular Correlations in Proton-Proton Collisions at the LHC.

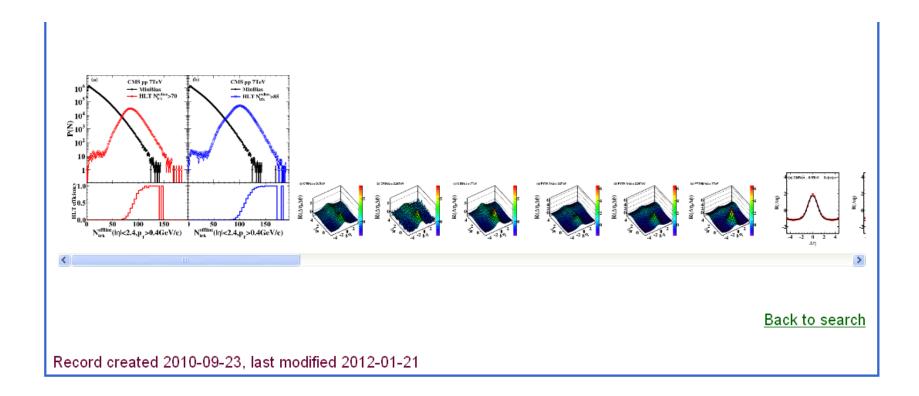
CMS Collaboration (Vardan Khachatryan et al.) Show all 2164 authors.

Sep 2010

JHEP 1009 (2010) 091 CMS-QCD-10-002,CERN-PH-EP-2010-031 e-Print: arXiv:1009.4122 [hep-ex]

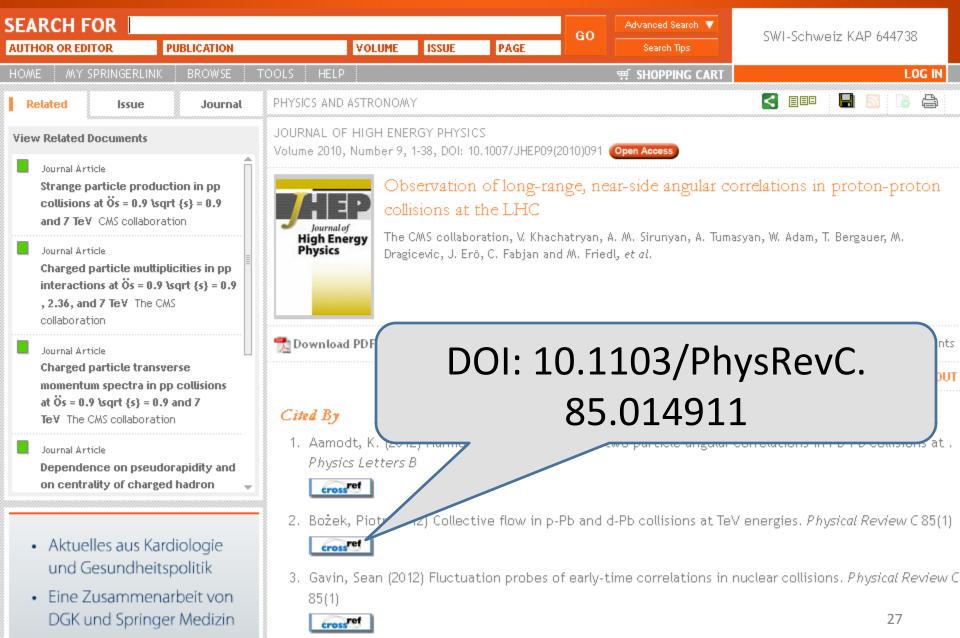
Abstract: Results on two-particle angular correlations for charged particles emitted in proton-proton collisions at center-of-mass energies of 0.9, 2.36, and 7 TeV are presented, using data collected with the CMS detector over a broad range of pseudorapidity (eta) and azimuthal angle (phi). Short-range correlations in Delta(eta), which are studied in minimum bias events, are characterized using a simple 'independent cluster' parametrization in order to quantify their strength (cluster size) and their extent in eta (cluster decay width). Long-range azimuthal correlations are studied differentially as a function of charged particle multiplicity and particle transverse momentum using a 980 inverse nb data set at 7 TeV. In high multiplicity events, a pronounced structure emerges in the two-dimensional correlation function for particle pairs with intermediate transverse momentum of 1-3 GeV/c, 2.0< |Delta(eta)| <4.8 and Delta(phi) near 0. This is the first observation of such a long-range, near-side feature in two-particle correlation functions in pp or p p-bar collisions

Keyword(s): INSPIRE: correlation function: two-particle | angular correlation: two-particle | charged particle: multiplicity | rapidity: correlation | correlation: short-range | p p: inelastic scattering | correlation: long-range | CERN LHC Coll | CMS | transverse momentum: dependence | experimental results | track data analysis: cluster | 900: 2360: 7000 GeV-cms





DOI: 10.1007/JHEP09(2010)091



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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 - Aad, Georges et al

doi:10.7483/inspirehep.data.123.456

Extra resource relating to the paper arxiv:1109.6572

Experimental acceptance/efficiency and excluded cross section*branching ratios: Signal expectations and experimental acceptance/efficiency for M_gluino vs M_squark grid (massless LSP), doi:10.7483/inspirehep.data.Z12.345

<u>Signal expectations and experimental acceptance/efficiency for CMSSM/MSUGRA grid</u>, doi:10.7483/inspirehep.data.543.21X

SLHA files:

<u>susy sqgl slha files</u>, doi:10.7483/inspire-hep.data.432-1MN <u>susy CMSSM/MSUGRA slha files</u> , doi:10.7483/inspirehep.data.432.1BA

The Durham HepData Project

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ATLAS MSSM_sqgl Spring 2011 slha 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	У	у	у	у	У	у	У	У	у	у	У		у			у
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0300	У	у	у	у	У	У	У	У	у	у	У	У	у	у	У	У
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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

References

- [1] J. Bagger and N. Lambert, Modeling multiple M2's, Phys. Rev. D 75 (2007) 045020 [hep-th/0611108] [INSPIRE].
- J. Bagger and N. Lambert, Gauge symmetry and supersymmetry of multiple M2-branes, Phys. Rev. D 77 (2008) 065008 [arXiv:0711.0955] [INSPIRE].
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- [4] O. Aharony, O. Bergman, D.L. Jafferis and J. Maldacena, N = 6 superconformal Chern-Simons-matter theories, M2-branes and their gravity duals, JHEP 10 (2008) 091 [arXiv:0806.1218] [INSPIRE].
- [5] O. Aharony, O. Bergman and D.L. Jafferis, Fractional M2-branes, JHEP 11 (2008) 043[arXiv:0807.4924] [INSPIRE].
- [6] O. Aharony, M. Berkooz and N. Seiberg, Light cone description of (2,0) superconformal theories in six-dimensions, Adv. Theor. Math. Phys. 2 (1998) 119 [hep-th/9712117] [INSPIRE].
- [7] G. Aad et al. 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 (2011), [ARXIV:1109.6572] [INSPIRE]
- [8] G. Aad et al. Data from: 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 (2011), doi:10.1234/inspirehep.data.123.456



Information

References (55)

Citations(9)

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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 - Aad, Georges et al

Paper (arXiv:1109.6572) cited by: 7 records

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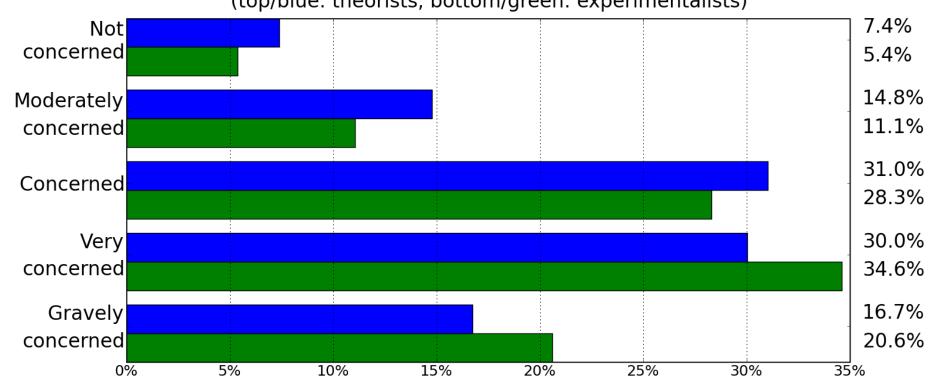
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Breakdown of papers by citations:		
Renowned papers (500+)	<u>2</u>	<u>1</u>
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Very well-known papers (100-249)	<u>12</u>	<u>12</u>
Well-known papers (50-99)	<u>24</u>	<u>23</u>
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Less known papers (1-9)	<u>448</u>	<u>170</u>
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Total number of citable datasets	<u>12</u>	
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Re-used datasets	<u>2</u>	
Published datasets	7	

Worries: documentation

If you were to re-use preserved data, to what extent would you be concerned by the following scenarios?

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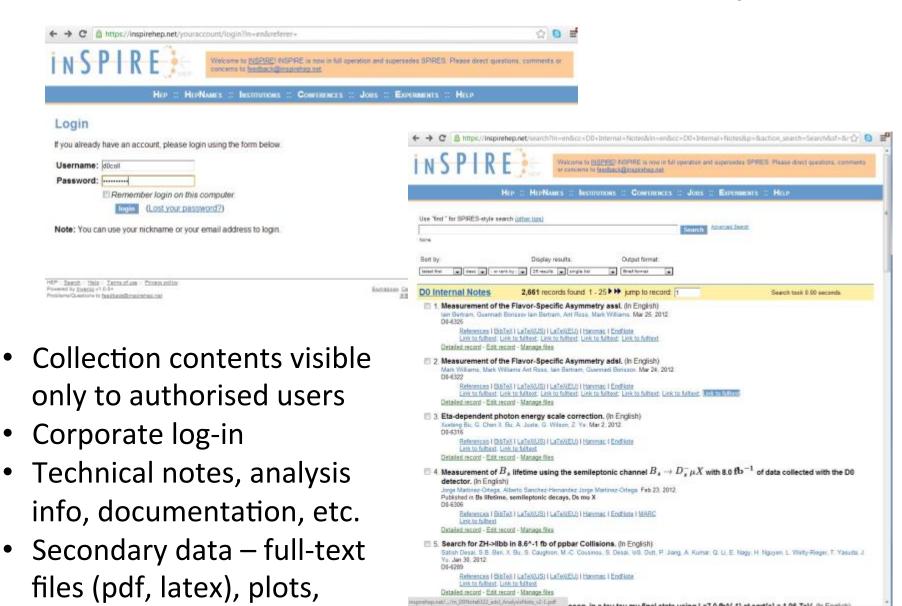


Zaven Akopov (DESY) REPORT ON LEVEL 1 PROJECT

Summary of Inspire activities with DPHEP

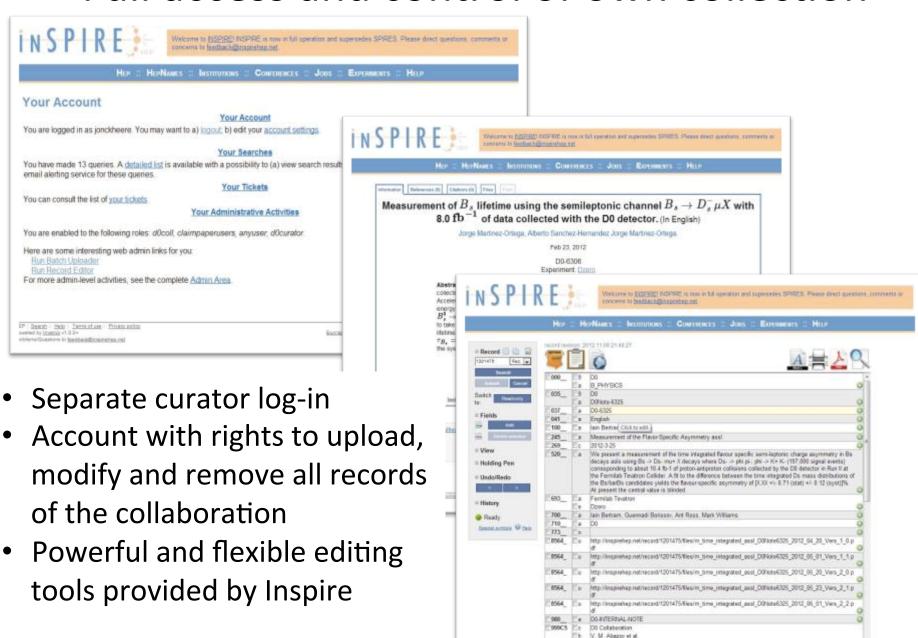
- Projects regarding the on storage of secondary data i.e. documents, notes, plots, are carried on successfully
 - Internal notes from HERMES, H1, ZEUS (HERA), D0 (Fermilab) have been fully ingested and available for the collaboration members under corporate account.
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 - They can upload, remove, and modify the contents of the collaboration's own collection.
- since Inspire is now considered as 1st choice for all of the HEP documentation and secondary data storage needs; this leads to
- more potential collaborators such as CDF with which we are in direct contact already, also BaBar expressed interest. You are all welcome to join!

Restricted collections for secondary data



tables

Full access and control of own collection



artiv: 1005-2757 Phys Rev .D82.032001

Documentation - Outlook

- Expand the notes workflow (Harvest/ingest) to further material (plots, file, codes...) - any ideas?
- Liaise with other experiments (in progress)
- New project: preserve preliminary notes
 - Pilot with ZEUS, already approved by the collaboration
 - Full control of the collaboration to make some sub-set of these (or all) public or not (later in time).
 - Record interconnection of existing/published papers with their corresponding preliminary records (through collaboration)
 - Long-term task for data archivist.

Summary

- Unequivocally identify data
- Making data citable via DOIs for individual datasets
- Display and stats of data citation
- Enabling persistent connections within INSPIRE and to other databases...
- Preservation of public and internal notes successful and growing