

# RUNII: No SUSY, No WIMP, No HIGGS, No NEW PHYSICS

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## Abstract

Here we consider some results of RUNII.

## Introduction

RUNI (since 10 September 2008 till 14 February 2013) did not give any substantive results [1]. In this article we consider some results of RUNII { June 2015 for today}.

## RUNII

**Search for narrow resonances decaying to dijets in proton-proton collisions at  $\sqrt{s} = 13$  TeV**

<http://arxiv.org/pdf/1512.01224.pdf>

no evidence for resonant particles is observed.

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Search for Space-Time Correlations from the Planck Scale with the Fermilab Holometer

<http://arxiv.org/abs/1512.01216>

"A model of universal exotic spatial shear correlations that matches the Planck scale holographic information bound of space-time position states is excluded to  $4.6\{\sigma\}$  significance."

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Search for New Phenomena in Dijet Mass and Angular Distributions with the ATLAS Detector at  $\sqrt{s} = 13$  TeV

<http://arxiv.org/abs/1512.01530>

" No evidence for anomalous phenomena is observed in the data"

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Search for strong gravity in multijet final states produced in pp collisions at  $\sqrt{s} = 13$  TeV using the ATLAS detector at the LHC

<http://arxiv.org/abs/1512.02586>

"No excess is seen"

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First Results from LUX, the World's Most Sensitive Dark Matter Detector

<http://newscenter.lbl.gov/2013/10/30/lux-first-results/>

"No such signals were seen."

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Search for new phenomena with photon+jet events in proton–proton collisions at  $\sqrt{s}=13$  TeV with the ATLAS detector

<http://cds.cern.ch/record/2116415>

"No significant deviation of the  $\gamma$ +jet invariant mass distribution from the background-only hypothesis is found."

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Search for a Low-Mass Neutral Higgs Boson with Suppressed Couplings to Fermions Using Events with Multiphoton Final States

<http://arxiv.org/abs/1601.00401>

"No evidence of a signal is observed in the data. "

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A Search of Low-Mass WIMPs with p-type Point Contact Germanium Detector in the CDEX-1 Experiment

<http://arxiv.org/abs/1601.04581>

" No excess of unidentified events are observed "

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First spin-dependent WIMP-nucleon cross section limits from the LUX experiment

<http://arxiv.org/pdf/1602.03489.pdf>

"we have set the most stringent limits on  
the SD WIMP-neutron cross section for all WIMP masses  
down to  $3.5 \text{ GeV}/c^2$   
from the 2013 LUX data and the  
proton-only limit is also competitive. We also improve

the constraints on the possible values of the couplings

ap and an, complementary to experiments"

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Search for new phenomena in final states with large jet multiplicities and missing transverse momentum with ATLAS using  $\sqrt{s}=13$  TeV proton--proton collisions

<http://arxiv.org/abs/1602.06194>

"No excess "

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Dark Matter Search Results from the Commissioning Run of PandaX-II

<http://arxiv.org/abs/1602.06563>

"No WIMP candidates are identified"

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Search for supersymmetry in the multijet and missing transverse momentum final state in pp collisions at 13 TeV

<http://arxiv.org/abs/1602.06581>

"The observed numbers of events in all search regions are found to be consistent with the expectations from standard model processes."

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A search for Secluded Dark Matter in the Sun with the ANTARES neutrino telescope

<http://arxiv.org/abs/1602.07000>

"no significant excess over background is observed"

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Search for supersymmetry at  $\sqrt{s}=13$  TeV in final states with jets and two same-sign leptons or three leptons with the ATLAS detector

ATLAS Collaboration

<http://arxiv.org/abs/1602.09058>

" No significant excess ... is observed."

---

Search for new physics with the MT2 variable in all-jets final states produced in pp collisions at  $\sqrt{s} = 13$  TeV

<http://arxiv.org/pdf/1603.04053.pdf>

"no evidence for new physics."

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Search for violations of Lorentz invariance and CPT symmetry in  $B^0_{(s)}$  mixing

<http://arxiv.org/abs/1603.04804>

" No periodic variations of the particle-antiparticle mass differences are found, consistent with Lorentz invariance and CPT symmetry. "

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Constraints on low-mass WIMPs from the EDELWEISS-III dark matter search

<http://arxiv.org/pdf/1603.05120.pdf>

"WIMP-nucleon scattering cross-sections are excluded at 90% CL above  $4.3 \times 10^{-40}$  cm<sup>2</sup> (resp.  $9.4 \times 10^{-44}$  cm<sup>2</sup>) for  $M_X = 5$  GeV/c<sup>2</sup> (resp.  $M_X = 20$  GeV/c<sup>2</sup>)."

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Search for QCD Instanton-Induced Processes at HERA in the High- $Q^2$  Domain

<http://arxiv.org/abs/1603.05567>

"No evidence for the production of QCD instanton-induced events is observed. "

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Limit on the production of a new vector boson in  $e^+ e^- \rightarrow U \gamma$ ,  $U \rightarrow e^+ e^-$  with the KLOE experiment

<http://arxiv.org/abs/1603.06086>

"We found no evidence for a signal"

---

Search for resonances in the mass distribution of jet pairs with one or two jets identified as  $b$ -jets in proton-proton collisions at  $\sqrt{s}=13$  TeV with the ATLAS detector

<http://arxiv.org/abs/1603.08791>

"No evidence of anomalous phenomena is observed in the data"

---

Search for new phenomena in events with a photon and missing transverse momentum in  $pp$  collisions at  $\sqrt{s}=13$  TeV with the ATLAS detector

<http://arxiv.org/pdf/1604.01306.pdf>

"The observed data are consistent with the Standard Model expectations."

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Search for solar axions with CsI(Tl) crystal detectors

<http://arxiv.org/pdf/1604.01825.pdf>

"no axion signal"

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First observation of  $p \bar{p} \rightarrow K^+ K^-$  and search for exotic baryons in  $pK$  systems

<http://arxiv.org/abs/1604.02525>

"no evidence for an exotic baryon"

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Search for metastable heavy charged particles with large ionization energy loss in  $pp$  collisions at  $\sqrt{s} = 13$  TeV using the ATLAS experiment

<http://arxiv.org/abs/1604.04520>

" No significant deviation from Standard Model background expectations is observed"

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Search for Screened Interactions Below the Dark Energy Length Scale Using Optically Levitated Microspheres

<http://arxiv.org/abs/1604.04908>

"The data are consistent with electrostatic backgrounds"

---

Search for new phenomena in final states with an energetic jet and large missing transverse momentum in  $pp$  collisions at  $\sqrt{s}=13$  TeV using the ATLAS detector

<https://arxiv.org/pdf/1604.07773>

"The measurements are in agreement with the SM predictions."

---

Search for Majorana Neutrinos near the Inverted Mass Hierarchy region with KamLAND-Zen

<http://arxiv.org/pdf/1605.02889.pdf>

"We found no event excess over the background expectation"

---

Search for new physics in same-sign dilepton events in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<http://arxiv.org/abs/1605.03171>

"No excess above the standard model background expectation is observed."

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Search for time-independent Lorentz violation using muon neutrino to muon antineutrino transitions in MINOS

<http://arxiv.org/abs/1605.03146>

" No evidence was found for such transitions"

---

Review of Searches for Rare Processes and Physics Beyond the Standard Model at HERA

<https://arxiv.org/pdf/1605.03459.pdf>

"No significant deviation from the Standard Model is observed in any of the search analyses performed by H1 and ZEUS"

---

Search for squarks and gluinos in final states with jets and missing transverse momentum at  $\sqrt{s} = 13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1605.03814>

"No excess above the Standard Model background expectation was observed"

---

Search for gluinos in events with an isolated lepton, jets and missing transverse momentum at  $\sqrt{s} = 13$  TeV with the ATLAS detector

<http://arxiv.org/abs/1605.04285>

"The data agree with the Standard Model background expectation in all six signal selections"

---

Search for a massive invisible particle  $X^0$  in  $B^+ \rightarrow e^+ X^0$  and  $B^+ \rightarrow \tau^+ X^0$  decays

<http://arxiv.org/abs/1605.04430>

"We find no evidence of a signal"

---

Searching for Sterile Neutrinos with MINOS

<http://arxiv.org/pdf/1605.04544.pdf>

"no statistically significant disagreement with three-flavour model"

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Search for supersymmetry in pp collisions at  $\sqrt{s} = 13$  TeV in the single-lepton final state using the sum of masses of large-radius jets

<http://arxiv.org/abs/1605.04608>

"The observed event yields in the signal regions in data are consistent with those expected for standard model backgrounds"

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Search for the Lepton Flavour Violating Decay  $\tau \rightarrow e^+ \gamma$  with the Full Dataset of the MEG Experiment

<http://arxiv.org/abs/1605.05081>

"No significant excess of events is observed in the dataset with respect to the expected background"

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Search for supersymmetry in the multijet and missing transverse momentum final state: an analysis performed on 2.3 fb<sup>-1</sup> of 13 TeV pp collision data collected with the CMS detector

<http://arxiv.org/abs/1605.05762>

"No significant excess is observed beyond the standard model (SM) expectation. "

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Search for scalar leptoquarks in  $pp$  collisions at  $\sqrt{s} = 13$  TeV with the ATLAS experiment

<http://arxiv.org/pdf/1605.06035.pdf>

"No significant excess above the SM background expectation was observed in either channel."

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A low-mass dark matter search using ionization signals in XENON100

<http://arxiv.org/pdf/1605.06262.pdf>

"The new result challenges a standard WIMP interpretation of the DAMA/LIBRA modulation signal, excludes large fractions of the CDMS-II (Si) preferred region and improves the result of the previous XENON100 result [10] below  $\approx 7.4$  GeV/c<sup>2</sup>"



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Search for pair production of gluinos decaying via stop and sbottom in events with  $b$ -jets and large missing transverse momentum in  $pp$  collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1605.09318>

"No excess is found "

---

Search for heavy long-lived charged  $R$ -hadrons with the ATLAS detector in  $3.2 \text{ fb}^{-1}$  of proton-proton collision data at  $\sqrt{s} = 13$  TeV

<http://arxiv.org/abs/1606.05129>

"No significant deviations from the expected background are observed. "

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Search for a muonic dark force at BABAR

<http://arxiv.org/abs/1606.03501>

" No significant signal is observed"

---

Search for top squarks in final states with one isolated lepton, jets, and missing transverse momentum in  $\sqrt{s}=13$  TeV  $pp$  collisions with the ATLAS detector

<http://arxiv.org/abs/1606.03903>

" No significant excess over the Standard Model background prediction is observed"

---

Search for new resonances in events with one lepton and missing transverse momentum in  $pp$  collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector

<http://arxiv.org/abs/1606.03977>

"no significant excess of events"

---

Searches for heavy diboson resonances in  $pp$  collisions at  $\sqrt{s}=13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1606.04833>

" No significant deviations from the Standard Model predictions are observed."

---

Search for the Higgs boson produced in association with a  $W$  boson and decaying to four  $b$ -quarks via two spin-zero particles in  $pp$  collisions at 13 TeV with the ATLAS detector

<http://arxiv.org/abs/1606.08391>

"No significant excess of events above the Standard Model prediction is observed"

---

Search for bottom squark pair production in proton--proton collisions at  $\sqrt{s}=13$  TeV with the ATLAS detector

<http://arxiv.org/abs/1606.08772>

"No excess above the expected Standard Model background yield is observed."

---

Search for supersymmetry in a final state containing two photons and missing transverse momentum in  $\sqrt{s} = 13$  TeV  $pp$  collisions at the LHC using the ATLAS detector

<http://arxiv.org/abs/1606.09150>

"No events are observed in the signal region;"

---

Search for new physics in final states with two opposite-sign, same-flavor leptons, jets, and missing transverse momentum in  $pp$  collisions at  $\sqrt{s} = 13$  TeV

<http://arxiv.org/pdf/1607.00915.pdf>

"no statistically significant

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Improved Search for a Light Sterile Neutrino with the Full Configuration of the Daya Bay Experiment

<http://arxiv.org/pdf/1607.01174.pdf>

"no evidence of sterile neutrino mixing"

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A search for sterile neutrinos mixing with muon neutrinos in MINOS

<http://arxiv.org/abs/1607.01176>

"No evidence for  $\nu_{\mu} \rightarrow \nu_{s}$  transitions is found"

---

Search for Higgs and  $Z$  Boson Decays to  $\gamma\gamma$  with the ATLAS Detector

<http://arxiv.org/abs/1607.03400>

" No significant excess of events is observed above the background"

---

Improved EDELWEISS-III sensitivity for low-mass WIMPs using a profile likelihood approach

<https://arxiv.org/abs/1607.03367>

"No statistically significant signal was found "

---

Search for high-mass new phenomena in the dilepton final state using proton--proton collisions at  $\sqrt{s}=13$  TeV with the ATLAS detector

<http://arxiv.org/abs/1607.03669>

"No significant deviation from the Standard Model prediction is observed;"

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Searches for Lepton Number Violation and resonances in the  $K^{\pm} \rightarrow \pi^{\pm} \nu \bar{\nu}$  decays at the NA48/2 experiment

<http://arxiv.org/pdf/1607.04216.pdf>

"No signals are observed."

---

Search for new resonances decaying to a  $W$  or  $Z$  boson and a Higgs boson in the  $e^+e^-b\bar{b}$ ,  $e^+e^-b\bar{b}$ , and  $e^+e^-b\bar{b}$  channels with  $pp$  collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector

<http://arxiv.org/abs/1607.05621>

"No significant excess is observed"

---

Search for squarks and gluinos in events with hadronically decaying tau leptons, jets and missing transverse momentum in proton-proton collisions at  $\sqrt{s}=13$  TeV recorded with the ATLAS detector

<http://arxiv.org/abs/1607.05979>

"No excess over the Standard Model prediction is observed in the data."

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World's Most Sensitive Dark Matter Detector Completes Search

<http://newscenter.lbl.gov/2016/07/21/worlds-sensitive-dark-matter-detector-completes-search/>

" no trace of a dark matter particle. "

---

Dark Matter Results from First 98.7-day Data of PandaX-II Experiment

<http://arxiv.org/abs/1607.07400>

"No dark matter candidate is identified"

---

Search for new phenomena in different-flavour high-mass dilepton final states in  $pp$  collisions at  $\sqrt{s}=13$  TeV with the ATLAS detector

<http://arxiv.org/abs/1607.08079>

"No excess over the Standard Model prediction is observed"

---

Search for Minimal Supersymmetric Standard Model Higgs bosons  $H/A$  and for a  $Z^{\prime}$  boson in the  $???$  final state produced in  $pp$  collisions at  $\sqrt{s}=13$  TeV with the ATLAS Detector

<http://arxiv.org/pdf/1608.00890.pdf>

"The search finds no indication of an excess over the expected background in the channels considered"

---

Search for low-mass WIMPs in a 0.6 kg day exposure of the DAMIC experiment at SNOLAB

<http://arxiv.org/pdf/1607.07410.pdf>

" 90% C.L. exclusion limits on the spin-independent WIMP-nucleon elastic-scattering cross-section were derived. "

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Search for dark matter produced in association with a hadronically decaying vector boson in  $pp$  collisions at  $\sqrt{s}=13$  TeV with the ATLAS detector

<http://arxiv.org/pdf/1608.02372v1.pdf>

"No statistically significant excess is observed over the Standard Model prediction."

---

Search for magnetic monopoles with the MoEDAL prototype trapping detector in 8 TeV proton-proton collisions at the LHC

<http://arxiv.org/abs/1604.06645>

" No magnetic charge exceeding  $0.5g_{\text{D}}$  (where  $g_{\text{D}}$  is the Dirac magnetic charge) is measured in any of the exposed samples"

---

Search for Violation of CPT and Lorentz Invariance in  $B^0_s$  Meson Oscillations using the D0 Detector

<http://arxiv.org/abs/1608.06935>

"No evidence for CPT-violating effects is observed "

---

Constraints on Large Extra Dimensions from the MINOS Experiment

<http://arxiv.org/abs/1608.06964>

"observe no evidence for deviations from standard three-flavor neutrino oscillations."

---

Results from a search for dark matter in LUX with 332 live days of exposure

<http://arxiv.org/abs/1608.07648>

"no evidence of WIMP nuclear recoils"

---

Search for high-mass diphoton resonances in proton-proton collisions at 13 TeV and combination with 8 TeV search

<http://arxiv.org/abs/1609.02507>

"No significant excess is observed relative to the standard model expectation."

---

Search for Higgs-like bosons decaying into long-lived exotic particles

<http://arxiv.org/abs/1609.03124>

" No excess above the background expectation is observed"

---

Investigating the Quantum Properties of Jets and the Search for a Supersymmetric Top Quark Partner with the ATLAS Detector

<http://arxiv.org/abs/1609.03242>

"there is no significant evidence for stop production at the LHC"

---

Search for dark matter in association with a Higgs boson decaying to  $b\bar{b}$ -quarks in  $pp$  collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector

<http://arxiv.org/pdf/1609.04572.pdf>

"No significant excess of events is observed above the background"

---

Search for narrow resonances in dilepton mass spectra in proton-proton collisions at  $\sqrt{s} = 13$  TeV and combination with 8 TeV data

<http://arxiv.org/abs/1609.05391>

"No evidence for non-standard-model physics is found, either in the 13 TeV data set alone, or in the combined data set"

---

Search for a dark vector gauge boson decaying to  $\chi^+ \chi^-$  using  $\chi \rightarrow \chi^+ \chi^- \gamma$  decays

<http://arxiv.org/abs/1609.05599>

"No signal is found"

---

Squark/gluino searches in hadronic channels with CMS

<http://arxiv.org/abs/1609.07445>

"We observed no significant deviation from the standard model prediction "

---

Inclusive search for supersymmetry using razor variables in  $pp$  collisions at  $\sqrt{s} = 13$  TeV

<http://arxiv.org/abs/1609.07658>

"No significant excess over the background prediction is observed in data"

---

Searches for long-lived and highly-ionizing particles at the CMS and ATLAS experiments

<http://arxiv.org/pdf/1609.08369.pdf>

"no evidence for new physics."

---

Search for long-lived charged particles in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/pdf/1609.08382.pdf>

"No significant excess of events is observed above the predicted background."

---

Search for supersymmetry in events with one lepton and multiple jets in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/pdf/1609.09386.pdf>

" The data agree with SM expectations

and no excess is observed."

---

Search for a new baryonic state decaying to  $pK^0_S$

<https://arxiv.org/abs/1610.02183>

"no evidence for this state is found"

---

Search for high-mass Z-gamma resonances in  $e+e-\gamma$  and  $\mu+\mu-\gamma$  final states in proton-proton collisions at  $\sqrt{s}=8$  and 13 TeV

<https://arxiv.org/abs/1610.02960>

"No statistically significant deviation from the standard model predictions has been found"

---

Search for invisible decays of sub-GeV dark photons in missing-energy events at the CERN SPS

<https://arxiv.org/abs/1610.02988>



"No evidence for such decays was found"

---

First results from a microwave cavity axion search at 24 micro-eV

<https://arxiv.org/abs/1610.02580>

"We exclude axion models with two-photon"

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Measurement of the  $^{116}\text{Cd}$  Decay Half-Life and Search for the  $^{116}\text{Cd}$  Decay of  $^{116}\text{Cd}$  with the NEMO-3 Detector

<https://arxiv.org/abs/1610.03226>

"No events have been observed above the expected background"

---

Search for Proton Decay via  $p \rightarrow e^+ \pi^0$  and  $p \rightarrow \mu^+ \pi^0$  in 0.31 megaton $\cdot$ years exposure of the Super-Kamiokande Water Cherenkov Detector

<https://arxiv.org/abs/1610.03597>

"No candidates were seen "

---

Search for the  $C\!P$ -violating strong decays  $\eta \rightarrow \pi^+ \pi^- \pi^0$  and  $\eta' \rightarrow \pi^+ \pi^- \pi^0$

<https://arxiv.org/abs/1610.03666>

"No evidence is seen"

---

A sterile neutrino search at NEOS Experiment

<https://arxiv.org/pdf/1610.05134.pdf>

" no strong evidence for 3+1 neutrino oscillations

is observed in this study."

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Looking for dark matter trails in colliding galaxy clusters

<https://arxiv.org/abs/1610.05327>

"We find no evidence for scattered dark matter particles"

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Constraints on Axion couplings from the CDEX-1 experiment at the China Jinping Underground Laboratory

<https://arxiv.org/abs/1610.07521>

"no excess signals are observed"

---

A search for new phenomena in pp collisions at  $\sqrt{s} = 13$  TeV in final states with missing transverse momentum and at least one jet using the  $\alpha_T$  variable

<https://arxiv.org/abs/1611.00338>

"The number of observed candidate events is found to agree with the expected contributions from standard model processes,"

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Final Results of the PICASSO Dark Matter Search Experiment

<https://arxiv.org/abs/1611.01499>

" No signal consistent with dark matter was observed."

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Search for Dark Matter in pp Collisions with CMS

<https://arxiv.org/pdf/1611.02933.pdf>

"The data are found to be in agreement with the SM prediction"

---

Search for a high mass diphoton resonance using the ATLAS detector

<https://arxiv.org/abs/1611.03308>

"No significant excess at such mass over the background expectation is observed in the 2016 data"

---

Search for dijet resonances in proton-proton collisions at  $\sqrt{s} = 13$  TeV and constraints on dark matter and other models

<https://arxiv.org/abs/1611.03568>

"no significant evidence for the production of new particles is observed."

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Limits on the effective quark radius from inclusive ep scattering & contact interactions at HERA

<https://arxiv.org/pdf/1611.03825.pdf>

"No significant deviation

from the SM predictions is observed for the VV scenario"

---

Search for new phenomena in events containing a same-flavour opposite-sign dilepton pair, jets, and large missing transverse momentum in  $\sqrt{s}=13$  TeV pp collisions with the ATLAS detector

<https://arxiv.org/pdf/1611.05791.pdf>

"The data in both searches are found to be consistent with the

Standard Model prediction"

---

Searches for top-antitop quark resonances at  $\sqrt{s}=13$  TeV with the CMS detector

<https://arxiv.org/abs/1611.06007>

"No significant excess is observed in the data compared to the expected SM background"

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Spin-dependent WIMP-nucleon cross section limits from first data of PandaX-II experiment

<https://arxiv.org/pdf/1611.06553.pdf>

"No excess of events was observed above background expectation"

---

Search for heavy resonances decaying to tau lepton pairs in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/pdf/1611.06594.pdf>

"The presence of Z' bosons decaying to a tau lepton pair is excluded..."

---

Search for supersymmetry in events with photons and missing transverse energy in pp collisions at 13 TeV

<https://arxiv.org/abs/1611.06604>

"No excess is observed with respect to the standard model expectation"

---

Evidence for the rare decay  $B \rightarrow p \gamma$  at LHCb

<https://arxiv.org/abs/1611.06717>

"No significant structure is observed in the dimuon invariant mass distribution."

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Why stop at two tops? Search for exotic production of top quarks in final states with same-sign leptons and b-jets at 13 TeV

<https://arxiv.org/pdf/1611.06767.pdf>

"No excess is observed in data"

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Search for magnetic monopoles with the MoEDAL forward trapping detector in 13 TeV proton-proton collisions at the LHC

<https://arxiv.org/abs/1611.06817>

"Magnetic charges exceeding half the Dirac charge are excluded in all samples"

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Heavy neutrino searches from MeV to TeV

<https://arxiv.org/pdf/1611.07215.pdf>

"For each one of

these experiments, no signal candidates were found."

---

Searches for Lepton Number Violation and resonances in the  $K_{\pm} \rightarrow \pi^{\pm} \nu \bar{\nu}$  decays at the NA48/2 experiment

<https://arxiv.org/abs/1611.07375>

" In the absence of a signal, upper limits are set on the products "

---

Search for Muonic Dark Forces at BABAR

<https://arxiv.org/pdf/1611.07934.pdf>

"No significant signal is observed for  $Z'$  masses "

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Search for rare B meson decays at the BaBar experiment

<https://arxiv.org/pdf/1611.07955.pdf>

"s no deviation from the SM prediction."

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Search for massive long-lived particles decaying semileptonically in the LHCb detector

<https://arxiv.org/abs/1612.00945>

"No excess above the background expectation is observed "

---

Search for single production of a heavy vector-like T quark decaying to a Higgs boson and a top quark with a lepton and jets in the final state

<https://arxiv.org/abs/1612.00999>

"No significant excess over standard model backgrounds is observed"

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Search for heavy neutrinos or third-generation leptoquarks in final states with two hadronically decaying tau leptons and two jets in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/pdf/1612.01190.pdf>

"WR masses below 2.35 (1.63) TeV are excluded at

95% confidence level"

"Leptoquarks with a mass

less than 740 GeV are excluded at 95% confidence level"

"Third-generation scalar leptoquarks with

masses below 740 GeV are excluded"

---

Search for dark matter from the first data of the PandaX-II experiment

<https://arxiv.org/abs/1612.01223>

"The observed data after selections are found to be consistent with background expectation"

---

DAMA/LIBRA results and perspectives

<https://arxiv.org/abs/1612.01387>

"No systematic or side reaction able to mimic the exploited DM signature has been found"

---

Search for new physics in semileptonic B-decays

<https://arxiv.org/abs/1611.08250>

" is consistent with the Standard Model."

---

Latest ATLAS results from Run 2

<https://arxiv.org/pdf/1612.01987.pdf>

"No excess

above Standard Model expectations is observed."

---

Searches for pair production for third-generation squarks in  $\sqrt{s}=13$  TeV pp collisions

<https://arxiv.org/abs/1612.03877>

"No statistically significant excess of events is found beyond the expected contribution from standard model processes."

---

Search for electroweak production of a vector-like quark decaying to a top quark and a Higgs boson using boosted topologies in fully hadronic final states

<https://arxiv.org/pdf/1612.05336.pdf>

"No significant excess of data above the background is observed"

---

Search for annihilating dark matter in the Sun with 3 years of IceCube data

<https://arxiv.org/pdf/1612.05949.pdf>

"No significant excess of events over the expected background was found"

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Search for Dark Matter Annihilation in the Earth using the ANTARES Neutrino Telescope

<https://arxiv.org/pdf/1612.06792.pdf>

"No significant

excess of neutrinos over the expected background has been observed."

---

Search for massive resonances decaying into WW, WZ or ZZ bosons in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1612.09159>

"No significant excess over the standard model background is observed."

---

Search for heavy gauge  $W'$  boson in events with an energetic lepton and large missing transverse momentum at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1612.09274>

" No evidence of an excess of events relative to the standard model expectations is observed."

---

Search for high-mass Z gamma resonances at  $\sqrt{s} = 8$  and 13 TeV using jet substructure techniques

<https://arxiv.org/abs/1612.09516>

"No significant excess is observed either in the individual analyses or the combination."

---

Search for Low-mass Dark-Sector Gauge Boson with the BABAR Detector

<https://arxiv.org/abs/1701.01753>

"No significant signal is observed."

---



Search for supersymmetry in the all-hadronic final state using top quark tagging in pp collisions at  $\sqrt{s}$  = 13 TeV

<https://arxiv.org/abs/1701.01954>

"no statistically significant excess of events observed beyond the expected contributions from the standard model"

---

Search for dark matter and unparticles in events with a Z boson and missing transverse momentum in proton-proton collisions at  $\sqrt{s}$  = 13 TeV

<https://arxiv.org/abs/1701.02042>

"No excess over the standard model expectation is observed. "

---

Search for Dark Matter with top quarks

<https://arxiv.org/abs/1701.03046>

"No signs of Dark Matter particles haven been observed "

---

Search for supersymmetry with multiple charged leptons in proton-proton collisions at  $\sqrt{s}$  = 13 TeV

<https://arxiv.org/pdf/1701.06940.pdf>

"These results are used to exclude regions in parameter space in a variety of simplified models of supersymmetry"

---

Search for single production of vector-like quarks decaying to a Z boson and a top or a bottom quark in proton-proton collisions at  $\sqrt{s}$  = 13 TeV

<https://arxiv.org/abs/1701.07409>

"No excess of events is observed over the standard model background expectation."

---

Search for single production of vector-like quarks decaying into a b quark and a W boson in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1701.08328>

"No excess over the standard model prediction is observed."

---

Dark Matter Search in a Proton Beam Dump with MiniBooNE

<https://arxiv.org/abs/1702.02688>

" No excess of events over background was observed"

---

Search for invisible decays of a dark photon produced in  $e+e-$  collisions at BaBar

<https://arxiv.org/abs/1702.03327>

"We find no evidence for such processes"

---

Search for sterile neutrino mixing using three years of IceCube DeepCore data

<https://arxiv.org/abs/1702.05160>

" The data are found to be consistent with the standard three neutrino hypothesis."

---

Dark Matter Search Results from the PICO-60 C3F8 Bubble Chamber

<https://arxiv.org/abs/1702.07666>

"A blind analysis of an efficiency-corrected 1167-kg-day exposure at a 3.3-keV thermodynamic threshold reveals no single-scattering nuclear recoil candidates, consistent with the predicted background."

---

Search for dark matter produced with an energetic jet or a hadronically decaying W or Z boson at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/pdf/1703.01651.pdf>

"No significant excess is observed"

---

Search for the third-generation scalar leptoquarks and heavy right-handed neutrinos in final states with two tau leptons and two jets in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/pdf/1703.03995.pdf>

"No excess is seen above the SM expectation within the statistical and systematic uncertainties in both searches."

---

Search for associated production of dark matter with a Higgs boson decaying to  $b\bar{b}$  or  $\gamma\gamma$  at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1703.05236>

"No significant excesses are observed over the background prediction."

---

Search for new phenomena in dijet events using 37 fb<sup>-1</sup> of pp collision data collected at  $\sqrt{s} = 13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1703.09127>

"no significant deviation is observed."

---

Search for new physics with dijet angular distributions in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/pdf/1703.09986.pdf>

"No significant deviation from the theory is observed. "

---

Search for dark matter at  $\sqrt{s} = 13$  TeV in final states containing an energetic photon and large missing transverse momentum with the ATLAS detector

<https://arxiv.org/pdf/1704.03848.pdf>

" The observed data are  
consistent with the Standard Model expectations."

---

Search for physics beyond the standard model in events with two leptons of same sign, missing transverse momentum, and jets in proton-proton collisions at  $\sqrt{s}=13$  TeV

<https://arxiv.org/abs/1704.07323>

"no excess yield is observed."

---

Search for supersymmetry in multijet events with missing transverse momentum in proton-proton collisions at 13 TeV

<https://arxiv.org/abs/1704.07781>

"No evidence for a significant excess of events is observed "

---

First axion dark matter search with toroidal geometry

<https://arxiv.org/abs/1704.07957>

" we exclude the axion-photon coupling  $g_{a\gamma\gamma}$  down to about  $5 \cdot 10^8 \text{ GeV}^{-1}$  over the axion mass range from 24.7 to 29.1  $\mu\text{eV}$  at the 90% confidence level. "

---

Search for new phenomena in a lepton plus high jet multiplicity final state with the ATLAS experiment using  $\sqrt{s} = 13$  TeV proton-proton collision data

<https://arxiv.org/abs/1704.08493>

"No significant excess over the Standard Model expectation is observed"

---

Search for black holes in high-multiplicity final states in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1705.01403>

"No statistically significant excess of events is observed."

---

New CAST Limit on the Axion-Photon Interaction

<https://arxiv.org/abs/1705.02290>

"The absence of a significant signal above background provides a world leading limit "

---

Dark Photon Search in the Mass Range Between 1.5 and 3.4 GeV/c<sup>2</sup>

<https://arxiv.org/abs/1705.04265>

"We observe no obvious enhancement"

---

Search for the dimuon decay of the Higgs boson in pp collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1705.04582>

" No significant excess is observed above the expected background."

---

Search for new phenomena with the MT<sub>2</sub> variable in the all-hadronic final state produced in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1705.04650>

"No excess event yield is observed above the predicted standard model background"

---

The observed event yields in the signal regions are consistent with those expected from standard model backgrounds.

<https://arxiv.org/abs/1705.04673>

"The observed event yields in the signal regions are consistent with those expected from standard model backgrounds. "

---

Search for WIMP Inelastic Scattering off Xenon Nuclei with XENON100

<https://arxiv.org/abs/1705.05830>

"We see no evidence for such inelastic WIMP-129Xe interactions."

---

First Dark Matter Search Results from the XENON1T Experiment

<https://arxiv.org/abs/1705.06655>

" the data is consistent with the background-only hypothesis. We derive the most stringent exclusion limits on the spin-independent WIMP-nucleon interaction"

---

Search for Neutrinos from Dark Matter Self-Annihilations in the center of the Milky Way with 3 years of IceCube/DeepCore

<https://arxiv.org/abs/1705.08103>

"we found no significant excess "

---

Search for pair production of vector-like top quarks in events with one lepton, jets, and missing transverse momentum in  $\sqrt{s}=13$  TeV pp collisions with the ATLAS detector

<https://arxiv.org/abs/1705.10751>

"No significant excess over the Standard Model expectation is seen"

---

Search for top quark partners with charge 5/3 in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1705.10967>

"No significant excess is observed in the data above the expected standard model background contribution "

---

Search for dark matter produced in association with heavy-flavor quarks in proton-proton collisions at  $\sqrt{s}=13$  TeV

<https://arxiv.org/abs/1706.02581>

"No deviations are observed with respect to standard model predictions"

---

Search for pair production of vector-like T and B quarks in single-lepton final states using boosted jet substructure techniques at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1706.03408>

"No excess over the predicted standard model background is observed."

---

New limits on heavy neutrinos from Kaon experiments at CERN

<https://arxiv.org/abs/1706.03553>

" In the absence of observed signal, the limits obtained"

---

Search for supersymmetry in final states with two same-sign or three leptons and jets using 36 fb<sup>-1</sup> of  $\sqrt{s}=13$  TeV pp collision data with the ATLAS detector

<https://arxiv.org/abs/1706.03731>

"No significant excess over the Standard Model prediction is observed. "

---

Search for new physics in the monophoton final state in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1706.03794>

"No deviations are observed relative to the predictions of the standard model."

---

Search for dark matter in association with a Higgs boson decaying to two photons at  $\sqrt{s}= 13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1706.03948>

"No significant excess over the expected background is observed."

---

Search for direct top squark pair production in events with a Higgs or Z boson, and missing transverse momentum in  $\sqrt{s}=13$  TeV pp collisions with the ATLAS detector

<https://arxiv.org/abs/1706.03986>

" No excess is observed in the data with respect to the SM predictions."

---

Searches for  $W'$  bosons decaying to a top quark and a bottom quark in proton-proton collisions at 13 TeV

<https://arxiv.org/abs/1706.04260>

"No evidence is found for a right-handed  $W'$  boson "

---

Search for top squark pair production in pp collisions at  $\sqrt{s}=13$  TeV using single lepton events

<https://arxiv.org/abs/1706.04402>

"No significant excess of events is observed "

---

Search for active-sterile neutrino mixing using neutral-current interactions in NOvA

<https://arxiv.org/abs/1706.04592>

"No evidence for  $\nu_\tau \rightarrow \nu_s$  transitions is found. "

---

Search for a new heavy gauge boson resonance decaying into a lepton and missing transverse momentum in  $36 \text{ fb}^{-1}$  of pp collisions at  $\sqrt{s}=13$  TeV with the ATLAS experiment

<https://arxiv.org/abs/1706.04786>



"no excess of events above the Standard Model prediction is observed"

---

Search for electroweak production of charginos and neutralinos in WH events in proton-proton collisions at  $\sqrt{s}=13$  TeV

<https://arxiv.org/abs/1706.09933>

"The event yields observed in data are consistent with the estimated standard model backgrounds. "

---

A search for Higgs boson pair production in the  $b\bar{b}\tau\tau$  final state in proton-proton collisions at  $\sqrt{s}=8$  TeV

<https://arxiv.org/abs/1707.00350>

"no significant excess relative to the background-only hypotheses has been found in either mode. "

---

Search for Dark Matter Produced in Association with a Higgs Boson Decaying to  $b\bar{b}$  using 36  $\text{fb}^{-1}$  of pp collisions at  $\sqrt{s}=13$  TeV with the ATLAS Detector

<https://arxiv.org/pdf/1707.01302.pdf>

"No significant deviation from SM predictions is observed."

---

Search for heavy resonances that decay into a vector boson and a Higgs boson in hadronic final states at  $\sqrt{s}=13$  TeV

<https://arxiv.org/pdf/1707.01303.pdf>

"Compared

to previous measurements, the range of resonance masses excluded within the framework of benchmark model B of the heavy vector triplet model is extended substantially to values as high as 3.3 TeV."

---

Low-Mass Dark Matter Search with CDMSlite

<https://arxiv.org/abs/1707.01632>

"Finally, new limits on spin-dependent low-mass WIMP-nucleon interactions are derived, with new parameter space excluded for WIMP masses  $\gtrsim 3 \text{ GeV}/c^2$ ."

---

Search for new high-mass phenomena in the dilepton final state using 36.1 fb<sup>-1</sup> of proton-proton collision data at  $\sqrt{s} = 13 \text{ TeV}$  with the ATLAS detector

<https://arxiv.org/abs/1707.02424>

"No significant deviation from the Standard Model prediction is observed."

---

Search for direct production of supersymmetric partners of the top quark in the all-jets final state in proton-proton collisions at  $\sqrt{s} = 13 \text{ TeV}$

<https://arxiv.org/abs/1707.03316>

"no significant excess of events observed"

---

Search for pair production of heavy vector-like quarks decaying to high- $p_{\text{T}}$  W bosons and b quarks in the lepton-plus-jets final state in pp collisions at  $\sqrt{s} = 13 \text{ TeV}$  with the ATLAS detector

<https://arxiv.org/abs/1707.03347>

"No significant deviation from the Standard Model expectation is observed "

---

Search for new phenomena in high-mass diphoton final states using 37 fb<sup>-1</sup> of proton-proton collisions collected at  $\sqrt{s} = 13 \text{ TeV}$  with the ATLAS detector

<https://arxiv.org/abs/1707.04147>

"No significant deviation from the Standard Model is observed"

---

Study of  $\Upsilon$  and dipion transitions in  $\Upsilon(4S)$  decays to lower bottomonia

<https://arxiv.org/abs/1707.04973>

"but do not find significant evidence for such a transition. "

---

Search for supersymmetry in events with at least one photon, missing transverse momentum, and large transverse event activity in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1707.06193>

" No significant excess of events above the expected standard model background is observed."

---

Search for the pair production of third-generation squarks with two-body decays to a bottom or charm quark and a neutralino in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1707.07274>

"No statistically significant excess of events is observed beyond the expected contribution from standard model processes."

---

Limits on Axion Couplings from the First 79.8-Day Data of the PandaX-II Experiment

<https://arxiv.org/abs/1707.07921>

"No solar axion or galactic axion-like dark matter particle candidate has been identified."

---

Search for solar Kaluza-Klein axion by annual modulation with the XMASS-I detector

<https://arxiv.org/abs/1707.08995>

"No significant event rate modulation is found"

---

First results from the DEAP-3600 dark matter search with argon at SNOLAB

<https://arxiv.org/abs/1707.08042>

" No candidate signal events are observed"

---

Search for new phenomena with large jet multiplicities and missing transverse momentum using large-radius jets and flavour-tagging at ATLAS in 13 TeV pp collisions

<https://arxiv.org/abs/1708.02794>

"no evidence is found"

---

Search for direct top squark pair production in final states with two leptons in  $\sqrt{s}=13$  TeV pp collisions with the ATLAS detector

<https://arxiv.org/abs/1708.03247>

"No significant excess of events is observed"

---

Search for diboson resonances with boson-tagged jets in pp collisions at  $\sqrt{s}=13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1708.04445>

"No significant excess is observed"

---

Search for massive resonances decaying into WW, WZ, ZZ, qW, and qZ with dijet final states at  $\sqrt{s}=13$  TeV

<https://arxiv.org/abs/1708.05379>

"No excess is observed"

---

Explore the Inelastic Frontier with 79.6-day of PandaX-II Data

<https://arxiv.org/pdf/1708.05825.pdf>

"We produced exclusion limits in a 5 wider mass splitting range...The result does not support the hypothesis that the high energy recoil events in CRESST were resulted from the inelastic scattering between WIMPs and tungsten nuclei."

---

SUSY strong production in leptonic final state with ATLAS

<https://arxiv.org/abs/1708.06927>

"No significant excess ..."

---

Dark Matter Results From 54-Ton-Day Exposure of PandaX-II Experiment

<https://arxiv.org/abs/1708.06917>

"No excess events were found ..."

---

High mass searches in CMS and ATLAS

<https://arxiv.org/abs/1708.07318>

" No excess above expectation from Standard Model processes are observed "

---

Dark Matter Searches with HAWC

<https://arxiv.org/pdf/1708.07461.pdf>

"No statistically significant gamma-ray flux has been found  
for a range of dark matter masses"

---

Search for long-lived neutral particles decaying into Lepton-Jets with the ATLAS detector in proton-proton collision data at 13 TeV

<https://arxiv.org/pdf/1708.07625.pdf>

"In the absence of a signal, the results of the search for LJ production are used to set upper limits on the product of cross section and Higgs decay branching fraction to LJs, as a function of the  $\tau$  mean lifetime in

the two FRVZ models."

---

Search for the direct production of charginos and neutralinos in  $\sqrt{s}=13$  TeV pp collisions with the ATLAS detector

<https://arxiv.org/abs/1708.07875>

"No significant deviation from the Standard Model background expectation is observed. "

---

Search for squarks and gluinos in events with an isolated lepton, jets and missing transverse momentum at  $\sqrt{s}=13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1708.08232>

"No significant excess beyond the expected background is found."

---

Search for heavy resonances decaying to a top quark and a bottom quark in the lepton+jets final state in proton-proton collisions at 13TeV

<https://arxiv.org/abs/1708.08539>

"No evidence is found "

---

Searches for rare and exotic Higgs decays with ATLAS

<https://arxiv.org/abs/1708.08900>

"No significant deviations from the Standard Model expectations are found."

---

Search for supersymmetry in events with b-tagged jets and missing transverse momentum in pp collisions at  $\sqrt{s}=13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1708.09266>

"No excess above the expected Standard Model background is observed."

---

Search for an invisibly decaying Higgs boson or dark matter candidates produced in association with a Z boson in pp collisions at  $\sqrt{s}=13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1708.09624>

"No significant deviation from the background expectation is observed. "

---

Searches for heavy ZZ and ZW resonances in the  $l_1 l_2 q \bar{q}$  and  $l_1 l_2 q q$  final states in pp collisions at  $\sqrt{s}=13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1708.09638>

"No evidence of the production of heavy resonances is observed. "

---

Searches for BSM Higgs bosons in fermion decay channels with CMS

<https://arxiv.org/pdf/1708.09651.pdf>

"No significant excess to SM prediction has been observed."

---

Searches for strong production of SUSY particles with two opposite-sign same-flavor leptons at CMS

<https://arxiv.org/pdf/1708.09655.pdf>

"No sign of Beyond Standard Model Physics has been observed."

---

Searches for Dark Matter in ATLAS

<https://arxiv.org/pdf/1708.09674.pdf>

"No evidence of physics beyond the Standard Model is observed "

---

Search for electroweak production SUSY in same-sign dileptons and multilepton final states with CMS

<https://arxiv.org/pdf/1708.09713.pdf>

"No significant deviation from the standard model expectations is observed. "

---

Searches for new physics in lepton plus jet final states in ATLAS and CMS

<https://arxiv.org/abs/1709.00229>

"In all the searches, the observed data are in good agreement with the standard model prediction"

---

Search for supersymmetry with Higgs boson to diphoton decays using the razor variables at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1709.00384>

" We exclude bottom squark pair-production with masses below 450 GeV for bottom squarks decaying to a bottom quark, a Higgs boson, and the lightest supersymmetric particle (LSP) for LSP masses below 250 GeV. For wino-like chargino-neutralino production, we exclude charginos with mass below 170 GeV for LSP masses below 25 GeV. In the GMSB scenario, we exclude charginos with mass below 205 GeV for neutralinos decaying to a Higgs boson and a goldstino LSP with 100% branching fraction."

---

Searches for third generation squarks with CMS

<https://arxiv.org/abs/1709.00868>

"In absence of statistically significant deviations from the standard model background, limits have been derived in terms of simplified model spectra, excluding for example a stop up to a mass of 1.05 TeV when it decays to a top and a massless neutralino."

---

Search for supersymmetric partners of third generation quarks in leptonic channels with the ATLAS detector

<https://arxiv.org/pdf/1709.01053.pdf>

"no significant excess is observed"

---



Current status of direct dark matter detection experiments

<https://arxiv.org/abs/1709.00688>

"solid evidence for their existence is yet to come"

---

Search for heavy neutrino in  $K \rightarrow \mu \nu H$  decay

<https://arxiv.org/pdf/1709.01473.pdf>

"No signal is seen" \_

---

Search for Bosonic Super-WIMP Interactions with the XENON100 Experiment

<https://arxiv.org/abs/1709.02222>

"no evidence for a signal above the expected background"

---

SM and BSM physics in single top quark at the LHC

<https://arxiv.org/abs/1709.02749>

"no deviations from Standard Model expectations have been observed"

---

Search for exotic decays of the Higgs boson

<https://arxiv.org/pdf/1709.03811.pdf>

" No excess of data above the predicted backgrounds has been seen in any

search for invisible Higgs boson decays, lepton-flavor violating Higgs boson decays, nor Higgs boson decays

to pseudoscalar pairs."

---

Search for a scalar partner of the top quark in the jets plus missing transverse momentum final state at  $\sqrt{s}=13$  TeV with the ATLAS detector

<https://arxiv.org/pdf/1709.04183.pdf>

"no significant excess over the expected Standard Model background."

---

Search for the SM Higgs boson produced in association with top quarks at  $\sqrt{s} = 13$  TeV with the ATLAS detector at the LHC

<https://arxiv.org/pdf/1709.04381.pdf>

"The observed data are consistent with either the background-only hypothesis"

---

Search for new physics in dijet final states in ATLAS and CMS

<https://arxiv.org/pdf/1709.04754.pdf>

"no hint of new physics was seen"

---

Search for higgsino pair production in pp collisions at  $\sqrt{s} = 13$  TeV in final states with large missing transverse momentum and two Higgs bosons decaying via  $H \rightarrow b\bar{b}$ ???

<https://arxiv.org/pdf/1709.04896.pdf>

"These results constitute the most stringent exclusion limits on this model to date."

---

Search for electroweak production of charginos and neutralinos in multilepton final states in proton-proton collisions at  $\sqrt{s}= 13$  TeV

<https://arxiv.org/pdf/1709.05406.pdf>

"No evidence of any significant deviation with respect to the SM prediction is observed."

---

Searches for New Heavy Resonances in Final States with Leptons and Photons in ATLAS and CMS

<https://arxiv.org/pdf/1709.06119.pdf>

"No

significant excess have been observed in the single lepton, dilepton, diphoton and Z $\gamma$  searches,"

---

A search for resonances decaying into a Higgs boson and a new particle X in the XH $\rightarrow$ qqbb final state with the ATLAS detector

<https://arxiv.org/pdf/1709.06783.pdf>

"The data are found to be in agreement with the Standard

Model background expectations and only small discrepancies are observed, with local (global) significance

of no more than 2.5 $\sigma$  (1.2 $\sigma$ )."

---

Search for additional heavy neutral Higgs and gauge bosons in the ditau final state produced in 36 fb $^{-1}$  of pp collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector

<https://arxiv.org/pdf/1709.07242.pdf>

" no indication of an excess over

the expected SM background is found."

---

Searches for new resonances decaying to W, Z and H bosons with the ATLAS and CMS detectors in 13 TeV proton-proton collisions at the LHC

<https://arxiv.org/pdf/1709.08905.pdf>

"no significant discrepancy has been found between the observed data and the SM expectation."

---

Search for new phenomena in final states with two opposite-charge, same-flavor leptons, jets, and missing transverse momentum in pp collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/pdf/1709.08908.pdf>

"no statistically significant  
evidence for a signal has been observed."

---

First Axion Dark Matter Search with Toroidal Geometry

<https://arxiv.org/pdf/1709.09437.pdf>

"We found no significant excess from  
the combined power spectrum and thus set exclusion  
limits of  $g_{a\gamma}$  for  $24.7 < m_a < 29.1 \mu\text{eV}$ ."

---

Search for supersymmetry in events with one lepton and multiple jets exploiting the angular correlation between the lepton and the missing transverse momentum in proton-proton collisions at  $\sqrt{s} = 13 \text{ TeV}$

<https://arxiv.org/pdf/1709.09814.pdf>

" The data  
agree with the expectations from the SM and no significant excess is observed."

---

Search for new phenomena in high-mass final states with a photon and a jet from pp collisions at  $\sqrt{s} = 13 \text{ TeV}$  with the ATLAS detector

<https://arxiv.org/abs/1709.10440>

"o significant deviation from the background-only hypothesis is observed "

---

Search for vector mediator of Dark Matter production in invisible decay mode

<https://arxiv.org/pdf/1710.00971.pdf>

"we

found no evidence for the existence of dark photon!"

---

Search for heavy resonances decaying into  $WW$  in the  $e^+e^-$  final state in  $pp$  collisions at  $\sqrt{s}=13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1710.01123>

"No evidence of such heavy resonances is found."

---

Search for pair production of vector-like quarks in the  $bWb^+W$  channel from proton-proton collisions at  $\sqrt{s}=13$  TeV

<https://arxiv.org/pdf/1710.01539.pdf>

"No statistically significant excess of events above the predicted background is observed in the data."

---

Search for pair production of vector-like quarks in the  $bWb^+W$  channel from proton-proton collisions at  $\sqrt{s}=13$  TeV

<https://arxiv.org/pdf/1710.01539.pdf>

"No statistically significant excess of events above the predicted background is observed in the data."\_

---

Search for 3rd generation superpartners with the ATLAS experiment

<https://arxiv.org/pdf/1710.02386.pdf>

"No significant excesses of observed data over predicted background processes have been observed"

---

Dark Matter Searches with LUX

<https://arxiv.org/abs/1710.03572>

"we observed no evidence for WIMP elastic scattering events."

---

Search for long-lived, massive particles in events with displaced vertices and missing transverse momentum in  $\sqrt{s} = 13$  TeV pp collisions with the ATLAS detector

<https://arxiv.org/abs/1710.04901>

"The observed yield is consistent with the expected background."

---

Search for a massive resonance decaying to a pair of Higgs bosons in the four b quark final state in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1710.04960>

"The observations are consistent with the background expectations,"

---

Searches for diboson resonances at CMS

<https://arxiv.org/pdf/1710.05230.pdf>

"no significant excess has been observed in recent  
13 TeV results"

---

Searches for strong production of supersymmetry at ATLAS and CMS

<https://arxiv.org/abs/1710.05327>

"No signs of new physics are found,"

---

A search for B?L R-parity-violating top squarks in  $\sqrt{s} = 13$  TeV pp collisions with the ATLAS experiment

<https://arxiv.org/abs/1710.05544>

" No significant excess is observed over the Standard Model background"

---

Search for sterile neutrinos in MINOS and MINOS+ using a two-detector fit

<https://arxiv.org/pdf/1710.06488.pdf>

"No evidence of mixing between active and sterile neutrinos  
is observed"

---

New results on Higgs boson properties

5 Searches for new phenomena

<https://arxiv.org/pdf/1710.07081.pdf>

"No

significant excess over the background expectation is observed"

---

A search for pair-produced resonances in four-jet final states at  $\sqrt{s}=13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1710.07171>

"No significant deviation from the background prediction is observed."

---

Search for WW/WZ resonance production in  $l\bar{l}q\bar{q}$  final states in pp collisions at  $\sqrt{s}=13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1710.07235>

"No significant excess of events is observed with respect to the Standard Model backgrounds. "

---

Hunting magnetic monopoles and more with MoEDAL at the LHC

<https://arxiv.org/pdf/1710.08609.pdf>

"no magnetic charge  $> 0.5g_D$  was detected

in any of the exposed!

---

Search for supersymmetry in events with at least three electrons or muons, jets, and missing transverse momentum in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1710.09154>

"No significant excess above the expected standard model background is observed."

---

Search for doubly charged Higgs boson production in multi-lepton final states with the ATLAS detector using proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1710.09748>

"No significant evidence of a signal is observed "

---

Search for supersymmetry in proton-proton collisions at 13 TeV using identified top quarks

<https://arxiv.org/abs/1710.11188>

"No statistically significant excess of events is observed relative to the expectation from the standard model. "

---

Search for dark matter produced in association with bottom or top quarks in  $\sqrt{s} = 13$  TeV pp collisions with the ATLAS detector

<https://arxiv.org/pdf/1710.11412.pdf>

"The data are found to

be consistent with the Standard Model expectations"

---

Searches for supersymmetry

<https://arxiv.org/pdf/1711.00152.pdf>



"still no significant

deviation from the Standard Model has been observed. "

---

Search for new physics in events with a leptonically decaying Z boson and a large transverse momentum imbalance in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1711.00431>

"No significant deviations from the background expectations are found"

---

Search for top squarks and dark matter particles in opposite-charge dilepton final states at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1711.00752>

"No significant deviation is observed from the expected background."

---

Search for Supersymmetry in final states with missing transverse momentum and multiple b-jets in proton-proton collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1711.01901>

"No excess is found above the predicted background."

---

The ANTARES Collaboration: Contributions to ICRC 2017 Part III: Searches for dark matter and exotics, neutrino oscillations and detector calibration

<https://arxiv.org/pdf/1711.01496.pdf>

### 3. Search in the Sun"

In that dataset no significant excess was found

### 4. Search in the Galactic Centre

no significant excess above the expected background

has been found

Search for  $\mu > 0.6$  magnetic monopoles with the

ANTARES neutrino telescope

No signal above

the background expectation from atmospheric muons and neutrinos is observed

there is no indication of the mass of the Dirac's magnetic monopole,

no candidates

were found

Matteo Sanguineti? on behalf of the ANTARES collaboration

no evidence of a statistical

significant shift from the nominal position" \_

---

Search for the standard model deviations in top quark precision studies at CMS

<https://arxiv.org/abs/1711.02153>

"No significant deviations from the SM predictions are observed."

---

Search for hidden-photon dark matter with the FUNK experiment

<https://arxiv.org/pdf/1711.02958.pdf>

"No signal was found"

---

Search for dark matter and other new phenomena in events with an energetic jet and large missing transverse momentum using the ATLAS detector

<https://arxiv.org/pdf/1711.03301.pdf>

"The measurements

are in agreement with the SM predictions"

"The results are translated into exclusion limits on WIMP-pair production"

---

Search for Boosted Dark Matter Interacting With Electrons in Super-Kamiokande

<https://arxiv.org/abs/1711.05278>

" No such excess is observed."

---

Search for rare and exotic Higgs Boson decay modes

<https://arxiv.org/abs/1711.05481>

"No hint for new physics has been found "

---

Search for gauge-mediated supersymmetry in events with at least one photon and missing transverse momentum in pp collisions at  $\sqrt{s}=13$  TeV

<https://arxiv.org/pdf/1711.08008.pdf>

"The data were found to agree with the expectation from the standard model, without any indication of new physics."

---

Search for new long-lived particles at  $\sqrt{s}=13$  TeV

<https://arxiv.org/pdf/1711.09120.pdf>

"no excess above the predicted background is found"

---

Search for top-squark pair production in final states with one lepton, jets, and missing transverse momentum using 36 fb<sup>-1</sup> of  $\sqrt{s}=13$  TeV pp collision data with the ATLAS detector

<https://arxiv.org/abs/1711.11520>

"No significant excess over the Standard Model prediction is observed. "

---

Measurement of the Energy-Dependent Neutrino-Nucleon Cross Section Above 10 TeV Using IceCube Showers

<https://arxiv.org/abs/1711.11043>

"we explicitly show for the first time that the energy dependence of the cross section above 18 TeV agrees with the predicted softer-than-linear dependence, and reaffirm the absence of new physics that would make the cross section rise sharply, up to a center-of-mass energy of  $\sim 1$  TeV."

---

The Pursuit of Dark Matter at Collider - An Overview

<https://arxiv.org/pdf/1712.01391.pdf>

"no signal  
has been found."

---

Search for long-lived charginos based on a disappearing-track signature in pp collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector

<https://arxiv.org/pdf/1712.02118.pdf>

"no excess is found" \_

---

Search for squarks and gluinos in final states with jets and missing transverse momentum using 36 fb<sup>-1</sup> of  $\sqrt{s}=13$  TeV pp collision data with the ATLAS detector

<https://arxiv.org/pdf/1712.02332.pdf>

"No significant deviation from the background expectation is found."

---

Search for new physics in final states with an energetic jet or a hadronically decaying W or Z boson and transverse momentum imbalance at  $\sqrt{s}= 13$  TeV

<https://arxiv.org/pdf/1712.02345.pdf>

"No excess of events is observed"

---

Search for the flavor-changing neutral current interactions of the top quark and the Higgs boson which decays into a pair of b quarks at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1712.02399>

"No significant deviation is observed from the predicted background."

---

Search for exclusive Higgs and Z boson decays to  $\tau\tau$  and  $\tau\tau$  with the ATLAS detector

<https://arxiv.org/abs/1712.02758>

" No significant excess of events is observed "

---

Improved Search for Heavy Neutrinos in the Decay  $\tau \rightarrow e \nu$

<https://arxiv.org/abs/1712.03275>

"No evidence was found"

---

Search for heavy resonances decaying into a W or Z boson and a Higgs boson in final states with leptons and b-jets in 36 fb<sup>-1</sup> of  $\sqrt{s} = 13$  TeV pp collisions with the ATLAS detector

<https://arxiv.org/abs/1712.06518>

"No significant excess is observed "

---

Search for lepton flavour violating decays of the Higgs boson to  $\tau\tau$  and  $e\tau$  in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1712.07173>

"No significant excess over the standard model expectation is observed"

---

Search for electroweak production of supersymmetric states in scenarios with compressed mass spectra at  $\sqrt{s} = 13$  TeV with the ATLAS detector

<https://arxiv.org/pdf/1712.08119.pdf>

"No significant excesses of the data above the expected background are observed."

---

Search for physics beyond the standard model in events with high-momentum Higgs bosons and missing transverse momentum in proton-proton collisions at 13 TeV

<https://arxiv.org/abs/1712.08501>

"No significant deviation from standard model expectations is observed."

---

Search for R-parity violating supersymmetry in pp collisions at  $\sqrt{s}=13$  TeV using b jets in a final state with a single lepton, many jets, and high sum of large-radius jet masses

<https://arxiv.org/abs/1712.08920>

"No significant excess beyond the prediction from standard model processes is observed."

---

Search for  $t\bar{t}$  Flavour Changing Neutral Currents in top-quark decays with the ATLAS detector

<https://arxiv.org/abs/1712.09802>

"No evidence for a signal is found. "

---

Electroweak production of two jets in association with a Z boson in proton-proton collisions at  $\sqrt{s}=13$  TeV

<https://arxiv.org/abs/1712.09814>

"No evidence is found "

---

Search for magnetic monopoles with the MoEDAL forward trapping detector in 2.11 fb<sup>-1</sup> of 13 TeV proton-proton collisions at the LHC

<https://arxiv.org/pdf/1712.09849.pdf>

"No genuine candidates were found."

---

Search for decays of stopped exotic long-lived particles produced in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/pdf/1801.00359.pdf>

", no excess above the estimated background has been observed."

---

Search for new physics in events with two soft oppositely charged leptons and missing transverse momentum in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1801.01846>

"The observed event yields are consistent with the expectations from the standard model."

---

First results from the HAYSTAC axion search

<https://arxiv.org/pdf/1801.00835.pdf>

"there was no experimental evidence

for any particular implementation of the Higgs mechanism."

"HAYSTAC has demonstrated total noise approaching the standard quantum limit for the first time in a haloscope axion search."

---

Combined search for electroweak production of charginos and neutralinos in proton-proton collisions at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/pdf/1801.03957.pdf>

"No significant

deviations from the SM expectations are observed."

"No significant deviations

from the standard model expectations have been observed."

"no significant deviations

from the standard model predictions are observed."

"No significant deviations

from the standard model expectations have been observed." \_

---

Searches for vector-like quarks and resonances decaying to top quarks with the ATLAS and CMS detectors

<https://arxiv.org/abs/1801.04417>

" No evidence for any of these hypothetical particles has been found yet"

---

A search for high-mass resonances decaying to ?? in pp collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1801.06992>

"No statistically significant excess above the Standard Model expectation is observed"

---

Search for  $W \rightarrow tb$  decays in the hadronic final state using pp collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector

<https://arxiv.org/abs/1801.07893>

"No significant deviation from the Standard Model prediction is observed "

---

Search for dark matter in events with energetic, hadronically decaying top quarks and missing transverse momentum at  $\sqrt{s} = 13$  TeV

<https://arxiv.org/abs/1801.08427>

"no significant deviations observed " \_

## **Conclusion**

Therefore, there is no hint at the existence of supersymmetry. There is no hint at the existence of particles of dark matter. there is no hint of going into a new physics. No connection was



found between the 124.5 - 126 GeV particle and the Higgs mechanism. There is no explanation of the stability of the universe in the Higgs field. We do not see the 58% decay of the Higgs to bb (only a few individual events) . **Crash!?**

Do not despair - exit here: [2].

### **Refetences**

1. Gunn Quznetsov, *Farewell to Higgs*, <http://vixra.org/pdf/1510.0105v3.pdf>
2. Gunn Quznetsov, *Fundamental Theoretical Physics is Part of Probability Theory*, LAMBERT Academic Publishing (2018 )