



Publicaciones Realizadas 2018

L. Theran, A. Rúa, F. E. Fernández, and **S. Lysenko**, "Parallel GPU computing in light scattering metrology of ultrafast surface dynamics," in *Frontiers in Optics / Laser Science*, OSA Technical Digest, paper JTU3A.123 (Optical Society of America, **2018**).

Dr. Sergiy Lysenko

A. Rúa, K. Echeverría, B. Ayala, G. Goenaga, **S. Lysenko**, and F. E. Fernández. *Toward reproducible metal-insulator transition characteristics in V2O3 thin films sputter-deposited on glass*, *J.Appl.Phys.* 124, 205301 (**2018**).

Larry Theran, Armando Rúa, Nardeep Kumar, Felix E. Fernández, **Sergiy Lysenko**. *Photoinduced surface dynamics of V3O5: visualization of autocorrelation function from light scattering data*, in *Frontiers in Optics / Laser Science*, OSA Technical Digest, paper [submitted] (Optical Society of America, **2018**).

Dr. Armando J. Rúa,

Armando Rúa, Karla Echeverría, Brian Ayala, Gabriel A. Goenaga, Sergiy Lysenko, and Félix E. Fernández, *Toward reproducible metal-insulator transition characteristics in V2O3 thin films sputter-deposited on glass*, *J. Appl. Phys.* 124, 205301 (**2018**).

Dr. Armando J. Rúa,
Dr. Sergiy Lysenko,
Dr. Félix Fernández

Photoinduced surface plasmon switching at VO₂/Au interface. N Kumar, **A Rúa**, J Aldama, K Echeverría, **FE Fernández**, **S Lysenko** *Optics Express* **26** (11), 13773 (**2018**).

Jury, M.R., 2018, *South Indian Ocean Rossby waves*, *Atmos Ocean*, 56, 322-331, doi:10.1080/07055900.2018.1544882.

Jury, M.R., 2018, *Global wave-2 structure of ENSO-modulated convection*, *Intl J. Climatology*, 38, doi:10.1002/joc.5963

Dr. Mark Jury

Jury, M.R., 2018, *Northward excursion of the ITCZ toward the Caribbean in boreal summer*, *Meteor Atmos Phys*, 130, doi10.1007/s00703-018-0642-1

Jury, M.R., 2018, *Puerto Rico sea level trend in regional context*, *J. Ocean Coastal Manag*, 163, 478-484. doi.org/10.1016/j.ocecoaman.2018.08.006

Jury, M.R., 2018, *Characteristics of Ethiopia air chemistry and its meteorological context*, *Earth Interactions*, 22, 1-22, doi.org/10.1175/EI-D-17-0009.1



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

Winter, A., **M.R. Jury**, P.W. Sammarco, D. Zanchettin, **2018**, *On the Relationship between Coral $\delta^{13}C$ and Caribbean climate*, Intl J Climatol, 38, 5689-5698. doi.org/10.1002/joc.5772

Jury, M R, 2018, The pattern of climate change around the Windward Passage, Theor Appl Climatol, 134, 1-9, doi:10.1007/s00704-018-2658-3

Jury, M R, 2018, *Climatic modulation of early summer dust emissions over West Africa*, J. Arid Environments, 152, 55-68.
doi:10.1016/j.jaridenv.2018.01.019

Jury, M R, 2018, *Climate trends across South Africa since 1980*, WaterSA, 44, 297-307. dx.doi.org/10.4314/wsa.v44i2.15

Jury, M.R. 2018, *Characteristics and meteorology of Atlantic swells reaching the Caribbean*, J. Coastal Res., 34, 400-412,
doi:10.2112/JCOASTRES-D-17-00029.1

Search for supersymmetry in events with a τ lepton pair and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1807.02048 [hep-ex].

Measurement of differential cross sections for inclusive isolated-photon and photon+jets production in proton-proton collisions at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1807.00782 [hep-ex].

Measurement of charged particle spectra in minimum-bias events from proton-proton collisions at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1806.11245 [hep-ex].

Dr. Sudhir Malik

Measurement of differential cross sections for Z boson pair production in association with jets at $\sqrt{s} = 8$ and 13 TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1806.11073 [hep-ex].

Search for heavy Majorana neutrinos in same-sign dilepton channels in proton-proton collisions at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1806.10905 [hep-ex].

Search for the decay of a Higgs boson in the $\ell\ell\gamma$ channel in proton-proton collisions at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1806.05996 [hep-ex]. Submitted to: JHEP.

Search for supersymmetric partners of electrons and muons in proton-proton collisions at $\sqrt{s} = 13$ TeV



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1806.05264 [hep-ex].
Submitted to: Phys.Lett.

Measurements of properties of the Higgs boson decaying to a W boson pair in pp collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1806.05246 [hep-ex].
Submitted to: Phys.Lett.

Search for dark matter produced in association with a Higgs boson decaying to $\gamma\gamma$ or $\tau^+\tau^-$ at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1806.04771 [hep-ex].
Submitted to: JHEP.

Observation of the $Z \rightarrow \psi \ell^+ \ell^-$ decay in pp collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1806.04213 [hep-ex].
Submitted to: Phys.Rev.Lett.

Search for resonant pair production of Higgs bosons decaying to bottom quark-antiquark pairs in proton-proton collisions at 13 TeV

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1806.03548 [hep-ex].
Submitted to: JHEP.

Search for a singly produced third-generation scalar leptoquark decaying to a τ lepton and a bottom quark in proton-proton collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1806.03472 [hep-ex].
Submitted to: JHEP.

Search for pair-produced resonances each decaying into at least four quarks in proton-proton collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1806.01058 [hep-ex].
10.3204/PUBDB-2018-02188.

Measurement of the weak mixing angle using the forward-backward asymmetry of Drell-Yan events in pp collisions at 8 TeV

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1806.00863 [hep-ex].
10.3204/PUBDB-2018-02189.



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

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

By CMS Collaboration (Albert M Sirunyan et al.).

arXiv:1806.00843 [hep-ex].

10.3204/PUBDB-2018-02190.

Angular analysis of the decay $B^+ \rightarrow K^+ \mu^+ \mu^-$ in proton-proton collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).

arXiv:1806.00636 [hep-ex].

10.3204/PUBDB-2018-02191.

Search for Higgs boson pair production in the $\gamma\gamma \rightarrow \overline{b}b$ final state in pp collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).

arXiv:1806.00408 [hep-ex].

10.3204/PUBDB-2018-02192.

Search for beyond the standard model Higgs bosons decaying into a $\overline{b}b$ pair in pp collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).

arXiv:1805.12191 [hep-ex].

Observation of the $\chi_{\text{b}1}(3P)$ and $\chi_{\text{b}2}(3P)$ and measurement of their masses

By CMS Collaboration (Albert M Sirunyan et al.).

arXiv:1805.11192 [hep-ex].

10.3204/PUBDB-2018-02193.

Constraints on models of scalar and vector leptoquarks decaying to a quark and a neutrino at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).

arXiv:1805.10228 [hep-ex].

10.3204/PUBDB-2018-02194.

Search for an exotic decay of the Higgs boson to a pair of light pseudoscalars in the final state with two b quarks and two τ leptons in proton-proton collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).

arXiv:1805.10191 [hep-ex].

10.3204/PUBDB-2018-02195.

Measurement of nuclear modification factors of $\Upsilon(1S)$, $\Upsilon(2S)$, and $\Upsilon(3S)$ mesons in PbPb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

10.3204/PUBDB-2018-02196.

Measurement of the production cross section for single top quarks in association with W bosons in proton-proton collisions at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1805.07399 [hep-ex].

10.3204/PUBDB-2018-02197.
JHEP.

Search for black holes and sphalerons in high-multiplicity final states in proton-proton collisions at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1805.06013 [hep-ex].

10.3204/PUBDB-2018-02198.

Search for top squarks decaying via four-body or chargino-mediated modes in single-lepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1805.05784 [hep-ex].

10.3204/PUBDB-2018-02199.

Measurement of the groomed jet mass in PbPb and pp collisions at $\sqrt{s_{\mathrm{NN}}} = 5.02$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1805.05145 [hep-ex].

10.3204/PUBDB-2018-02200.

Search for an exotic decay of the Higgs boson to a pair of light pseudoscalars in the final state of two muons and two τ leptons in proton-proton collisions at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1805.04865 [hep-ex].

10.3204/PUBDB-2018-02201.

Search for vector-like T and B quark pairs in final states with leptons at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1805.04758 [hep-ex].

10.3204/PUBDB-2018-02202.

Constraining gluon distributions in nuclei using dijets in proton-proton and proton-lead collisions at $\sqrt{s_{\mathrm{NN}}} = 5.02$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1805.04736 [hep-ex].

10.3204/PUBDB-2018-02203.



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

Measurement of prompt $\psi(2S)$ production cross sections in proton-lead and proton-proton collisions at $\sqrt{s_{\mathrm{NN}}}=5.02$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1805.02248 [hep-ex].
10.3204/PUBDB-2018-02204.

Measurement of the top quark mass with lepton+jets final states using pp collisions at $\sqrt{s}=13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1805.01428 [hep-ex].
10.3204/PUBDB-2018-02205.

Elliptic flow of charm and strange hadrons in high-multiplicity pPb collisions at $\sqrt{s_{\mathrm{NN}}}=8.16$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1804.09767 [hep-ex].
10.3204/PUBDB-2018-02206.
Phys.Rev.Lett..

Search for disappearing tracks as a signature of new long-lived particles in proton-proton collisions at $\sqrt{s}=13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1804.07321 [hep-ex].

Measurement of differential cross sections for Z boson production in association with jets in proton-proton collisions at $\sqrt{s}=13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1804.05252 [hep-ex].

Performance of the CMS muon detector and muon reconstruction with proton-proton collisions at $\sqrt{s}=13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1804.04528 [physics.ins-det].
10.1088/1748-0221/13/06/P06015.
JINST 13 (2018) no.06, P06015.

Search for $\overline{t}H$ production in the $H\rightarrow\overline{b}b$ decay channel with leptonic \overline{t} decays in proton-proton collisions at $\sqrt{s}=13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1804.03682 [hep-ex].

Measurements of Higgs boson properties in the diphoton decay channel in proton-proton collisions at $\sqrt{s}=13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1804.02716 [hep-ex].



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

Observation of $\overline{t}t$ $\overline{t}t$ production

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev.Lett. 120 (2018) no.23, 231801.

Search for a new scalar resonance decaying to a pair of Z bosons in proton-proton collisions at $\sqrt{s}=13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1806 (2018) 127.

Search for high-mass resonances in final states with a lepton and missing transverse momentum at $\sqrt{s}=13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1806 (2018) 128.

Search for a heavy right-handed W boson and a heavy neutrino in events with two same-flavor leptons and two jets at $\sqrt{s}=13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1805 (2018) no.05, 148.

Search for a new heavy resonance decaying into a Z boson and a Z or W boson in $2\ell 2q$ final states at $\sqrt{s}=13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1803.10093 [hep-ex].

Measurement of differential cross sections for the production of top quark pairs and of additional jets in lepton+jets events from pp collisions at $\sqrt{s}=13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev. D97 (2018) no.11, 112003.

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

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1803.08030 [hep-ex].

Search for $\overline{t}t$ production in the all-jet final state in proton-proton collisions at $\sqrt{s}=13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1806 (2018) 101.

Search for additional neutral MSSM Higgs bosons in the $\tau\tau$ final state in proton-proton collisions at $\sqrt{s}=13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1803.06553 [hep-ex].

Search for high-mass resonances in dilepton final states in proton-proton collisions at $\sqrt{s}=13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1806 (2018) 120.



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

Evidence for associated production of a Higgs boson with a top quark pair in final states with electrons, muons, and hadronically decaying τ leptons at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).

arXiv:1803.05485 [hep-ex].

Observation of proton-tagged, central (semi)exclusive production of high-mass lepton pairs in pp collisions at 13 TeV with the CMS-TOTEM precision proton spectrometer

By CMS and TOTEM Collaborations (Albert M Sirunyan et al.).

arXiv:1803.04496 [hep-ex].

Submitted to: JHEP.

Measurements of differential cross sections of top quark pair production as a function of kinematic event variables in proton-proton collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (A.M. Sirunyan et al.).

JHEP 1806 (2018) 002.

Search for a heavy resonance decaying into a Z boson and a vector boson in the $\nu\overline{\nu}\overline{q}q$ final state

By CMS Collaboration (Albert M Sirunyan et al.).

arXiv:1803.03838 [hep-ex].

Search for third-generation scalar leptoquarks decaying to a top quark and a τ lepton at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).

arXiv:1803.02864 [hep-ex].

Jet properties in PbPb and pp collisions at $\sqrt{s_{NN}} = 5.02$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).

JHEP 1805 (2018) 006.

Search for a heavy resonance decaying to a pair of vector bosons in the lepton plus merged jet final state at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).

JHEP 1805 (2018) 088.

Search for narrow resonances in the b-tagged dijet mass spectrum in proton-proton collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (A. M. Sirunyan et al.).

Phys.Rev.Lett. 120 (2018) no.20, 201801.

Measurement of the Λ_b polarization and angular parameters in $\Lambda_b \rightarrow J/\psi, \Lambda$ decays from pp collisions at $\sqrt{s} = 7$ and 8 TeV

By CMS Collaboration (Albert M Sirunyan et al.).

Phys.Rev. D97 (2018) no.7, 072010.



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

Search for heavy neutral leptons in events with three charged leptons in proton-proton collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev.Lett. 120 (2018) no.22, 221801.

Measurement of the inelastic proton-proton cross section at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1802.02613 [hep-ex].

Search for natural and split supersymmetry in proton-proton collisions at $\sqrt{s} = 13$ TeV in final states with jets and missing transverse momentum

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1805 (2018) 025.

Search for single production of vector-like quarks decaying to a b quark and a Higgs boson

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1806 (2018) 031.

Search for lepton-flavor violating decays of heavy resonances and quantum black holes to $e\mu$ final states in proton-proton collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1804 (2018) 073.

Comparing transverse momentum balance of b jet pairs in pp and PbPb collisions at $\sqrt{s_{\mathrm{NN}}} = 5.02$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1803 (2018) 181.

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

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1806 (2018) 027.

Observation of medium induced modifications of jet fragmentation in PbPb collisions using isolated-photon-tagged jets

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1801.04895 [hep-ex].

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

By CMS Collaboration (A.M. Sirunyan et al.).
JHEP 1803 (2018) 160.

Measurement of the $\mathrm{Z}\gamma^ \rightarrow \tau\tau$ cross section in pp collisions at $\sqrt{s} = 13$ TeV and validation of τ lepton analysis techniques*

By CMS Collaboration (Albert M Sirunyan et al.).



arXiv:1801.03535 [hep-ex].

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

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B782 (2018) 440-467.

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

By CMS Collaboration (A.M. Sirunyan et al.).
JHEP 1805 (2018) 127.

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

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B783 (2018) 114-139.

Measurement of prompt and nonprompt charmonium suppression in PbPb collisions at 5.02 TeV

By CMS Collaboration (Albert M Sirunyan et al.).
Eur.Phys.J. C78 (2018) no.6, 509.

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

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev.Lett. 120 (2018) no.24, 241801.

Bose-Einstein correlations in pp , $p\text{Pb}$, and PbPb collisions at $\sqrt{s_{NN}} = 0.9-7$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev. C97 (2018) no.6, 064912.

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

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1806 (2018) 001.

Identification of heavy-flavour jets with the CMS detector in pp collisions at 13 TeV

By CMS Collaboration (A.M. Sirunyan et al.).
JINST 13 (2018) no.05, P05011.

Search for the $X(5568)$ state decaying into $B^0\pi^{\pm}$ in proton-proton collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (A. M. Sirunyan et al.).
Phys.Rev.Lett. 120 (2018) no.20, 202005.



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

Azimuthal correlations for inclusive 2-jet, 3-jet, and 4-jet events in pp collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1712.05471 [hep-ex].

Search for $Z\gamma$ resonances using leptonic and hadronic final states in proton-proton collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1712.03143 [hep-ex].

Measurement of the associated production of a single top quark and a Z boson in pp collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B779 (2018) 358-384.

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

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1806 (2018) 102.

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

By CMS Collaboration (A. M. Sirunyan et al.).
Phys.Rev. D97 (2018) no.9, 092005.

Constraints on the double-parton scattering cross section from same-sign W boson pair production in proton-proton collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1802 (2018) 032.

Search for pair production of excited top quarks in the lepton + jets final state

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B778 (2018) 349-370.

Study of jet quenching with isolated-photon+jet correlations in PbPb and pp collisions at $\sqrt{s_{NN}} = 5.02$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1711.09738 [nucl-ex].

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

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B780 (2018) 432-454.

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

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B780 (2018) 118-143.



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

Non-Gaussian elliptic-flow fluctuations in PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1711.05594 [nucl-ex].

Search for excited quarks of light and heavy flavor in $\gamma + \text{jet}$ final states in proton–proton collisions at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B781 (2018) 390-411.

Search for ZZ resonances in the $2\ell 2\nu$ final state in proton-proton collisions at 13 TeV
By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1803 (2018) 003.

Measurement of the underlying event activity in inclusive Z boson production in proton-proton collisions at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1711.04299 [hep-ex].

Measurement of the inclusive $\overline{t}t$ cross section in pp collisions at $\sqrt{s} = 5.02$ TeV using final states with at least one charged lepton
By CMS Collaboration (A.M. Sirunyan et al.).
JHEP 1803 (2018) 115.

Measurement of the cross section for top quark pair production in association with a W or Z boson in proton-proton collisions at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1711.02547 [hep-ex].

Measurement of associated Z + charm production in proton-proton collisions at $\sqrt{s} = 8$ TeV
By CMS Collaboration (A.M. Sirunyan et al.).
Eur.Phys.J. C78 (2018) no.4, 287.

Search for top squarks and dark matter particles in opposite-charge dilepton final states at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev. D97 (2018) no.3, 032009.

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
By CMS Collaboration (A.M. Sirunyan et al.).
Eur.Phys.J. C78 (2018) no.4, 291.

Search for supersymmetry in proton-proton collisions at 13 TeV using identified top quarks
By CMS Collaboration (Albert M Sirunyan et al.).



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

Phys.Rev. D97 (2018) no.1, 012007.

Measurement of quarkonium production cross sections in pp collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (A.M. Sirunyan et al.).
Phys.Lett. B780 (2018) 251-272.

Search for standard model production of four top quarks with same-sign and multilepton final states in proton-proton collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
Eur.Phys.J. C78 (2018) no.2, 140.

Pseudorapidity distributions of charged hadrons in proton-lead collisions at $\sqrt{s_{\mathrm{NN}}} = 5.02$ and 8.16 TeV

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1801 (2018) 045.

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

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1802 (2018) 067.

Measurement of b hadron lifetimes in pp collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
Eur.Phys.J. C78 (2018) no.6, 457.

Measurement of differential cross sections in the kinematic angular variable ϕ^ for inclusive Z boson production in pp collisions at $\sqrt{s} = 8$ TeV*

By CMS Collaboration (A.M. Sirunyan et al.).
JHEP 1803 (2018) 172.

Pseudorapidity and transverse momentum dependence of flow harmonics in pPb and PbPb collisions

By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1710.07864 [nucl-ex].

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

By CMS Collaboration (A.M. Sirunyan et al.).
Phys.Lett. B781 (2018) 244-269.

*Measurement of angular parameters from the decay $\mathrm{B}^0 \rightarrow \mathrm{K}^{*0} \mu^+ \mu^-$ in proton-proton collisions at $\sqrt{s} = 8$ TeV*

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B781 (2018) 517-541.



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

Study of dijet events with a large rapidity gap between the two leading jets in pp collisions at $\sqrt{s}=7\text{ TeV}$

By CMS Collaboration (Albert M Sirunyan et al.).
Eur.Phys.J. C78 (2018) no.3, 242.

Search for pair production of vector-like quarks in the $bW\overline{b}$ channel from proton-proton collisions at $\sqrt{s} = 13\text{ TeV}$

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B779 (2018) 82-106.

Search for low mass vector resonances decaying into quark-antiquark pairs in proton-proton collisions at $\sqrt{s}=13\text{ TeV}$

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1801 (2018) 097.

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 $\sqrt{s} = 13\text{ TeV}$

By CMS Collaboration (A.M. Sirunyan et al.).
Phys.Lett. B780 (2018) 384-409.

Observation of Correlated Azimuthal Anisotropy Fourier Harmonics in pp and $p+Pb$ Collisions at the LHC

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev.Lett. 120 (2018) no.9, 092301.

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

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1803 (2018) 076.

Measurements of the $p\rightarrow Z$ production cross section and the $Z\rightarrow 4\ell$ branching fraction, and constraints on anomalous triple gauge couplings at $\sqrt{s} = 13\text{ TeV}$

By CMS Collaboration (Albert M Sirunyan et al.).
Eur.Phys.J. C78 (2018) 165, Erratum: Eur.Phys.J. C78 (2018) no.6, 515.

Evidence for the Higgs boson decay to a bottom quark-antiquark pair

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B780 (2018) 501-532.

Observation of electroweak production of same-sign W boson pairs in the two jet and two same-sign lepton final state in proton-proton collisions at $\sqrt{s} = 13\text{ TeV}$

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev.Lett. 120 (2018) no.8, 081801.



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

Inclusive search for a highly boosted Higgs boson decaying to a bottom quark-antiquark pair

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev.Lett. 120 (2018) no.7, 071802.

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

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1803 (2018) 166.

Combination of inclusive and differential $\overline{t}t$ charge asymmetry measurements using ATLAS and CMS data at $\sqrt{s}=7$ and 8 TeV

By ATLAS and CMS Collaborations (Morad Aaboud et al.).
JHEP 1804 (2018) 033.

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 $H \rightarrow b\bar{b}$

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev. D97 (2018) no.3, 032007.

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

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B779 (2018) 166-190.

Measurement of the Splitting Function in pp and Pb-Pb Collisions at $\sqrt{s_{NN}}=5.02$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev.Lett. 120 (2018) no.14, 142302.

Challenges to the chiral magnetic wave using charge-dependent azimuthal anisotropies in pPb and $PbPb$ collisions at

$\sqrt{s_{NN}}=5.02$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
arXiv:1708.08901 [nucl-ex].

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

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B777 (2018) 39-63.

Measurement of normalized differential $\overline{t}t$ cross sections in the dilepton channel from pp collisions at $\sqrt{s}=13$ TeV

By CMS Collaboration (A.M. Sirunyan et al.).
JHEP 1804 (2018) 060.



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

Search for massive resonances decaying into WW , WZ , ZZ , qW , and qZ with dijet final states at $\sqrt{s}=13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev. D97 (2018) no.7, 072006.

Nuclear modification factor of D^0 mesons in PbPb collisions at $\sqrt{s_{NN}} = 5.02$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B782 (2018) 474-496.

Search for resonant and nonresonant Higgs boson pair production in the $b\bar{b}\ell\nu\ell\nu$ final state in proton-proton collisions at $\sqrt{s}=13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1801 (2018) 054.

Measurement of prompt D^0 meson azimuthal anisotropy in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev.Lett. 120 (2018) no.20, 202301.

Constraints on the chiral magnetic effect using charge-dependent azimuthal correlations in $p\text{-Pb}$ and PbPb collisions at the CERN Large Hadron Collider
By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev. C97 (2018) no.4, 044912.

Search for single production of a vector-like T quark decaying to a Z boson and a top quark in proton-proton collisions at $\sqrt{s} = 13$ TeV
By CMS Collaboration (A.M. Sirunyan et al.).
Phys.Lett. B781 (2018) 574-600.

Observation of the Higgs boson decay to a pair of τ leptons with the CMS detector
By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B779 (2018) 283-316.

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
By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B778 (2018) 263-291.

Search for natural supersymmetry in events with top quark pairs and photons in pp collisions at $\sqrt{s} = 8$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1803 (2018) 167.



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

Search for Higgs boson pair production in events with two bottom quarks and two tau leptons in proton–proton collisions at $\sqrt{s}=13\text{TeV}$
By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B778 (2018) 101-127.

Suppression of Excited Υ States Relative to the Ground State in Pb-Pb Collisions at $\sqrt{s_{\text{NN}}}=5.02\text{TeV}$
By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev.Lett. 120 (2018) no.14, 142301.

Measurements of $t\bar{t}$ cross sections in association with $b\bar{b}$ jets and inclusive jets and their ratio using dilepton final states in pp collisions at $\sqrt{s}=13\text{TeV}$
By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B776 (2018) 355-378.

Azimuthal anisotropy of charged particles with transverse momentum up to 100 GeV/c in PbPb collisions at $\sqrt{s_{\text{NN}}}=5.02\text{TeV}$
By CMS Collaboration (A.M. Sirunyan et al.).
Phys.Lett. B776 (2018) 195-216.

Search for dark matter and unparticles produced in association with a Z boson in proton-proton collisions at $\sqrt{s}=8\text{TeV}$
By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Rev. D93 (2016) no.5, 052011, Erratum: Phys.Rev. D97 (2018) no.9, 099903.

Observation of sequential Upsilon suppression in PbPb collisions
By CMS Collaboration (Serguei Chatrchyan et al.).
Phys.Rev.Lett. 109 (2012) 222301, Erratum: Phys.Rev.Lett. 120 (2018) no.19, 199903.
