



Publicaciones Realizadas 2017

Dr. Félix Fernández *Maximizing performance of photothermal actuators by combining smart materials with supplementary advantages.* Submitted to: Science Advances T. Wang, D. Torres, **F.E. Fernández**, C. Wang, N. Sepúlveda (2017).

S. Lysenko, N. Kumar, A. Rúa, J. Figueroa, J. Lu, F. Fernandez, "Ultrafast Structural Dynamics of VO₂", Phys. Rev. B. (2017, Submitted).

*Dr. Sergiy Lysenko,
Dr. Nardeep Kumar,
Dr. Armando J. Rúa,
Dr. Jun-Quiang Lu,
Dr. Félix Fernández*

N. Kumar, A. Rúa, J. Lu, F. Fernandez, S. Lysenko, "Ultrafast excited-state dynamics of V₃O₅ as a signature of a photoinduced insulator-metal phase transition", Phys. Rev. Lett. , (2017, Accepted)

Ultrafast structural dynamics of VO₂
S Lysenko, N Kumar, A Rúa, J Figueroa, J Lu, F Fernández
Physical Review B 96 (7), 075128 (2017).

Ultrafast Excited-State Dynamics of V₃O₅ as a Signature of a Photoinduced Insulator-Metal Phase Transition
N Kumar, A Rúa, J Lu, F Fernández, S Lysenko
Physical Review Letters 119 (5), 057602 (2017).

*Dr. Sergiy Lysenko,
Dr. Nardeep Kumar,
Dr. Armando J. Rúa,
Dr. Félix Fernández*

Ultrafast diffraction conoscopy of the structural phase transition in VO₂: Evidence of two lattice distortions
N Kumar, A Rúa, FE Fernández, S Lysenko
Physical Review B 95 (23), 235157 (2017).

Metal-insulator transition and nonlinear optical response of sputter-deposited V₃O₅ thin films
A Rúa, RD Díaz, N Kumar, S Lysenko, FE Fernández
Journal of Applied Physics 121 (23), 2353021 (2017).

Time-resolved light scattering by photoexcited V₂O₃
N Kumar, A Rúa, R Díaz, I Castillo, B Ayala, S Cita, F Fernández, S Lysenko
MRS Advances 2 (23), 1231 (2017).

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

N. Kumar, A. Rúa, F. E. Fernandez, S. Lysenko, "Ultrafast diffraction conoscopy of the structural phase transition in VO₂: Evidence of two lattice distortions", Phys. Rev. B. 95, 235157 (2017).
doi:10.1103/PhysRevB.95.235157

A. Rúa, R. D. Diaz, N. Kumar, S. Lysenko, F. E. Fernandez, "Metal-insulator transition and nonlinear optical response of sputter-deposited V₃O₅ thin films", J. Appl. Phys. 121, 235302 (2017). doi:10.1063/1.4986486



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

N. Kumar, **A. Rua**, R. Diaz, I. Castillo, B. Ayala, S. Cita, **F. Fernandez**, **S. Lysenko**, "Time-resolved light scattering by photoexcited V2O3", MRS Advances 2, 1231 (2017). doi:10.1557/adv.2017.91

N. Kumar, **A. Rua**, L. R. Chevres, L. Theran, B. Ayala, **F. E. Fernandez**, **S. Lysenko**, "Photoinduced optical dynamics of phase-change vanadium oxides", Proc. of SPIE. SPIE Optics + Photonics 2017. Paper# 10345-48, (2017).

Super-resolution in diffractive imaging from hemispherical elastic light scattering data

S Lysenko, V Sterligov, M Gonçalves, **A Rúa**, I Gritsayenko, **F Fernández** Optics Letters 42 (12), 2263 (2017).

Dr. Sergiy Lysenko,
Dr. Félix Fernández

S. Lysenko, V. Sterligov, M. Goncalves, A. Rua, I. Gritsayenko, **F. Fernandez**, "Super-resolution in diffractive imaging from hemispherical elastic light scattering data", Opt. Lett. 42, 2263 (2017). doi:10.1364/OL.42.002263

Feng Zhai, Jian Wu, Yang Li, **Jun-Qiang Lu**. *Nanoscale capacitance: a quantumtight-binding model*. Phys. Lett. A 381, 44 (2017).

Dr. Jun-Qiang Lu

L.Z. Zhang, F. Zhai, K.H. Jin, B. Cui, Z. Wang, **J.Q. Lu**, **F. Liu**. *Quantum Spin Hall effect and Strain Tuned Spin Transport in As-Graphane Systems*. Nano Lett. Accepted & Published ASAP (2017).

L.Z. Zhang, F. Zhai, K.H. Jin, B. Cui, Z. Wang, **J.Q. Lu**, **F. Liu**. *Quantum Spin Hall effect and Strain Tuned Spin Transport in As-Graphane Systems*. Nano Lett. 17, 4359 (2017).

Dr. Dilsom A. Sánchez

Elastic and inelastic behavior of perovskite multiferroics I: PbZr0.53Ti0.47O3(PZT)- PbFe0.5Nb0.5O3(PFN) perovskite. M. A. Carpenter, J. Schiemer, I. Lascu, R. Harrison, A. Kumar, **D. A. Sanchez**, R. S. Katiyar, N. Ortega, C. Salazar, W. Schnelle, M. Echizen, H. Shinohara, A. Heap, N. Ragavan, S. Dutton, and J. F. Scott. Journal of Material Sciences. doi:10.1007/s10853-016-0280-2 (2017)

Mark R Jury 2017, *Spatial gradients in climatic trends across the southeastern Antilles 1980-2014*, *International J. Climatology*, 37, doi:10.1002/joc.5156

Dr. Mark Jury

Mark R Jury 2017, *Meteorological controls on NW Atlantic swells reaching Puerto Rico*, *Journal of Coastal Research*, 34, doi:10.2112/JCOASTRES-D-17-00029.1

Mark R Jury 2017, *Uganda rainfall variability and prediction*, *Theoretical & Applied Climatology*, 128, doi:10.1007/s00704-017-2135-4



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

Mark R Jury 2017, *Warm spells on the East African plateau and impacts in the White Nile basin*, *Theoretical & Applied Climatology*, 129, doi:10.1007/s00704-017-2195-5

Mark R Jury 2017, *Statistics and meteorology of air pollution episodes over the South African Highveld based on satellite-model datasets*, *J. Applied Meteorology & Climatology*, 56, doi.org/10.1175/JAMC-D-16-0354.1

Mark R Jury 2017, *Modulation of currents near Durban*, *Regional Studies in Marine Science*, 18, doi.org/10.1016/j.rsma.2017.10.009

Mark R Jury 2017, *Eastern Venezuela coastal upwelling in regional context*, *Regional Studies in Marine Science*, 18, doi.org/10.1016/j.rsma.2017.10.010

Mark R Jury 2017, *Evaluation of satellite-model proxies for hydro-meteorological services in the upper Zambezi*, *J. Hydrology : Regional Studies*, 13, doi.org/10.1016/j.ejrh.2017.08.003

Mark R Jury 2017, *Observed formation of easterly waves over northeast Africa*, *Meteorology & Atmospheric Physics*, 129, doi:10.1007/s00703-017-0520-2

Search for anomalous couplings in boosted WW/WZ production in proton-proton collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Albert M Sirunyan et al.)
Phys.Lett. B772 (2017) 21-42.

Measurement of the top quark mass using single top quark events in proton-proton collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Albert M Sirunyan et al.)
Eur.Phys.J. C77 (2017) no.5, 354.

Measurement of the cross section for electroweak production of $Z\gamma$ in association with two jets and constraints on anomalous quartic gauge couplings in proton-proton collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Vardan Khachatryan et al.)
Phys.Lett. B770 (2017) 380-402.

Measurement of prompt and nonprompt J/ψ production in p - p and p - Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV

By CMS Collaboration (Albert M Sirunyan et al.)
Eur.Phys.J. C77 (2017) no.4, 269.

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

By CMS Collaboration (Albert M Sirunyan et al.)
JHEP 1705 (2017) 029.

Dr. Sudhir Malik



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 dark matter and unparticles in events with a Z boson and missing transverse momentum in proton-proton collisions at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1703 (2017) 061.

Mechanical stability of the CMS strip tracker measured with a laser alignment system
By CMS Collaboration (Albert M Sirunyan et al.).
JINST 12 (2017) no.04, P04023.

Search for heavy gauge W' boson in events with an energetic lepton and large missing transverse momentum at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B770 (2017) 278-301.

Measurement of electroweak-induced production of $W\gamma$ with two jets in pp collisions at $\sqrt{s}=8$ TeV and constraints on anomalous quartic gauge couplings
By CMS Collaboration (Vardan Khachatryan et al.).
JHEP 1706 (2017) 106.

Search for massive resonances decaying into WW, WZ or ZZ bosons in proton-proton collisions at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1703 (2017) 162.

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
By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1704 (2017) 136.

Searches for pair production of third-generation squarks in $\sqrt{s}=13$ TeV pp collisions
By CMS Collaboration (Albert M Sirunyan et al.).
Eur.Phys.J. C77 (2017) no.5, 327.

Search for heavy neutrinos or third-generation leptoquarks in final states with two hadronically decaying τ leptons and two jets in proton-proton collisions at $\sqrt{s}=13$ TeV
By CMS Collaboration (Vardan Khachatryan et al.).
JHEP 1703 (2017) 077.

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
By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B771 (2017) 80-105.



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 CP violation in $t\bar{t}$ production and decay in proton-proton collisions at $\sqrt{s}=8$ TeV
By CMS Collaboration (Vardan Khachatryan et al.).
JHEP 1703 (2017) 101.

Search for supersymmetry in events with photons and missing transverse energy in pp collisions at 13 TeV
By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B769 (2017) 391-412.

Search for heavy resonances decaying to tau lepton pairs in proton-proton collisions at $\sqrt{s}=13$ TeV
By CMS Collaboration (Vardan Khachatryan et al.).
JHEP 1702 (2017) 048.

Measurement of the $t\bar{t}$ production cross section using events in the $e\mu$ final state in pp collisions at $\sqrt{s} = 13$ TeV
By CMS Collaboration (Vardan Khachatryan et al.).
Eur.Phys.J. C77 (2017) 172.

Measurements of differential production cross sections for a Z boson in association with jets in pp collisions at $\sqrt{s}=8$ TeV
By CMS Collaboration (Vardan Khachatryan et al.).
JHEP 1704 (2017) 022.

Search for dijet resonances in proton-proton collisions at $\sqrt{s} = 13$ TeV and constraints on dark matter and other models
By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B769 (2017) 520-542.

Charged-particle nuclear modification factors in PbPb and pPb collisions at $\sqrt{s_{\mathrm{NN}}}=5.02$ TeV
By CMS Collaboration (Vardan Khachatryan et al.).
JHEP 1704 (2017) 039.

Suppression of $Upsilon(1S)$, $Upsilon(2S)$ and $Upsilon(3S)$ production in PbPb collisions at $\sqrt{s_{\mathrm{NN}}}=2.76$ TeV
By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B770 (2017) 357-379.

Relative Modification of Prompt $\psi(2S)$ and J/ψ Yields from pp to PbPb Collisions at $\sqrt{s_{\mathrm{NN}}}=5.02$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev.Lett. 118 (2017) no.16, 162301.

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 α_{T} variable
By CMS Collaboration (Vardan Khachatryan et al.).
Eur.Phys.J. C77 (2017) no.5, 294.



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 the mass difference between top quark and antiquark in pp collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Serguei Chatrchyan et al.).
Phys.Lett. B770 (2017) 50-71.

Searches for invisible decays of the Higgs boson in pp collisions at $\sqrt{s} = 7, 8, \text{ and } 13$ TeV

By CMS Collaboration (Vardan Khachatryan et al.).
JHEP 1702 (2017) 135.

Search for heavy resonances decaying into a vector boson and a Higgs boson in final states with charged leptons, neutrinos, and b quarks

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B768 (2017) 137-162.

Observation of $\Upsilon(1S)$ pair production in proton-proton collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Vardan Khachatryan et al.).
JHEP 1705 (2017) 013.

Search for R-parity violating supersymmetry with displaced vertices in proton-proton collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Rev.D, Phys.Rev. D95 (2017) 012009.

Search for electroweak production of charginos in final states with two τ leptons in pp collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Vardan Khachatryan et al.).
JHEP 1704 (2017) 018.

Search for top quark decays via Higgs-boson-mediated flavor-changing neutral currents in pp collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Vardan Khachatryan et al.).
JHEP 1702 (2017) 079.

Measurements of differential cross sections for associated production of a W boson and jets in proton-proton collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Rev.D, Phys.Rev. D95 (2017) 052002.

Measurement of differential cross sections for top quark pair production using the lepton+jets final state in proton-proton collisions at 13 TeV

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Rev. D95 (2017) no.9, 092001.

Search for anomalous Wtb couplings and flavour-changing neutral currents in t-channel single top quark production in pp collisions at $\sqrt{s} = 7$ and 8 TeV

By CMS Collaboration (Vardan Khachatryan et al.).
JHEP 1702 (2017) 028.



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

By CMS Collaboration (Vardan Khachatryan et al.).
JHEP 1701 (2017) 076.

Suppression and azimuthal anisotropy of prompt and nonprompt J/ψ production in PbPb collisions at $\sqrt{s_{NN}} = 2.76$ TeV

By CMS Collaboration (Vardan Khachatryan et al.).
Eur.Phys.J. C77 (2017) no.4, 252.

Observation of charge-dependent azimuthal correlations in pPb collisions and its implication for the search for the chiral magnetic effect

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Rev.Lett. 118 (2017) no.12, 122301.

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

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Rev. D95 (2017) no.1, 012011.

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

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Rev. D95 (2017) no.1, 012003.

Measurement of the WZ production cross section in pp collisions at $\sqrt{s} = 7$ and 8 TeV and search for anomalous triple gauge couplings at $\sqrt{s} = 8$ TeV

By CMS Collaboration (V. Khachatryan et al.).
Eur.Phys.J. C77 (2017) no.4, 236.

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

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B768 (2017) 57-80.

Measurement and QCD analysis of double-differential inclusive jet cross sections in pp collisions at $\sqrt{s} = 8$ TeV and cross section ratios to 2.76 and 7 TeV

By CMS Collaboration (Vardan Khachatryan et al.).
JHEP 1703 (2017) 156.

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

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B767 (2017) 147-170.



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

The CMS trigger system

By CMS Collaboration (Vardan Khachatryan et al.).
JINST 12 (2017) no.01, P01020.

Measurement of the total and differential inclusive B^+ hadron cross sections in pp collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B771 (2017) 435-456.

Measurement of the production cross section of a W boson in association with two b jets in pp collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Vardan Khachatryan et al.).
Eur.Phys.J. C77 (2017) no.2, 92.

Search for new phenomena in events with high jet multiplicity and low missing transverse momentum in proton–proton collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B770 (2017) 257-267.

Measurement of the WZ production cross section in pp collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B766 (2017) 268-290.

Jet energy scale and resolution in the CMS experiment in pp collisions at 8 TeV

By CMS Collaboration (Vardan Khachatryan et al.).
JINST 12 (2017) no.02, P02014.

Observation of the decay $B^+ \rightarrow \psi(2S) \phi(1020) K^+$ in pp collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B764 (2017) 66-86.

Evidence for collectivity in pp collisions at the LHC

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B765 (2017) 193-220.

Measurement of the transverse momentum spectra of weak vector bosons produced in proton–proton collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Vardan Khachatryan et al.).
JHEP 1702 (2017) 096.

Measurement of the transverse momentum spectrum of the Higgs boson produced in pp collisions at $\sqrt{s} = 8$ TeV using $H \rightarrow WW$ decays

By CMS Collaboration (Vardan Khachatryan et al.).
JHEP 1703 (2017) 032.



Search for Dark Matter and Supersymmetry with a Compressed Mass Spectrum in the Vector Boson Fusion Topology in Proton-Proton Collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Vardan Khachatryan et al.).

Phys.Rev.Lett. 118 (2017) no.2, 021802.

Search for top squark pair production in compressed-mass-spectrum scenarios in proton-proton collisions at $\sqrt{s} = 8$ TeV using the α_T variable

By CMS Collaboration (Vardan Khachatryan et al.).

Phys.Lett. B767 (2017) 403-430.

Multiplicity and rapidity dependence of strange hadron production in pp, pPb, and PbPb collisions at the LHC

By CMS Collaboration (Vardan Khachatryan et al.).

Phys.Lett. B768 (2017) 103-129.

Measurements of the \overline{t} production cross section in lepton+jets final states in pp collisions at 8 TeV and ratio of 8 to 7 TeV cross sections

By CMS Collaboration (Vardan Khachatryan et al.).

Eur.Phys.J. C77 (2017) no.1, 15.

Observation of top quark production in proton-nucleus collisions

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

Phys.Rev.Lett. 119 (2017) no.24, 242001.

Search for Evidence of the Type-III Seesaw Mechanism in Multilepton Final States in Proton-Proton Collisions at $\sqrt{s} = 13$ TeV

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

Phys.Rev.Lett. 119 (2017) no.22, 221802.

Principal-component analysis of two-particle azimuthal correlations in PbPb and pPb collisions at CMS

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

Phys.Rev. C96 (2017) no.6, 064902.

Measurement of vector boson scattering and constraints on anomalous quartic couplings from events with four leptons and two jets in proton-proton collisions at $\sqrt{s} = 13$ TeV

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

Phys.Lett. B774 (2017) 682-705.

Search for a light pseudoscalar Higgs boson produced in association with bottom quarks in pp collisions at $\sqrt{s} = 8$ TeV

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

JHEP 1711 (2017) 010.



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 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

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1712 (2017) 142.

Measurement of the differential cross sections for the associated production of a W boson and jets in proton-proton collisions at $\sqrt{s}=13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev. D96 (2017) no.7, 072005.

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

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1710 (2017) 005.

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

By CMS Collaboration (Albert M Sirunyan et al.).
Eur.Phys.J. C77 (2017) no.9, 636.

Constraints on anomalous Higgs boson couplings using production and decay information in the four-lepton final state

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B775 (2017) 1-24.

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

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev. D96 (2017) no.7, 072004.

Measurement of charged pion, kaon, and proton production in proton-proton collisions at $\sqrt{s}=13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev. D96 (2017) no.11, 112003.

Measurements of properties of the Higgs boson decaying into the four-lepton final state in pp collisions at $\sqrt{s}=13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1711 (2017) 047.

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

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1711 (2017) 029.

Search for a heavy composite Majorana neutrino in the final state with two leptons and two quarks at $\sqrt{s}=13$ TeV

By CMS Collaboration (A.M. Sirunyan et al.).
Phys.Lett. B775 (2017) 315-337.



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 the semileptonic $\overline{t}t + \gamma$ production cross section in pp collisions at $\sqrt{s}=8$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1710 (2017) 006.

Measurements of jet charge with dijet events in pp collisions at $\sqrt{s}=8$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1710 (2017) 131.

Particle-flow reconstruction and global event description with the CMS detector
By CMS Collaboration (A.M. Sirunyan et al.).
JINST 12 (2017) no.10, P10003.

Search for top squark pair production in pp collisions at $\sqrt{s}=13$ TeV using single lepton events
By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1710 (2017) 019.

Searches for W' bosons decaying to a top quark and a bottom quark in proton-proton collisions at 13 TeV
By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1708 (2017) 029.

Search for new physics in the monophoton final state in proton-proton collisions at $\sqrt{s}=13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1710 (2017) 073.

Search for pair production of vector-like T and B quarks in single-lepton final states using boosted jet substructure in proton-proton collisions at $\sqrt{s}=13$ TeV
By CMS Collaboration (A.M. Sirunyan et al.).
JHEP 1711 (2017) 085.

Search for dark matter produced in association with heavy-flavor quark pairs in proton-proton collisions at $\sqrt{s}=13$ TeV
By CMS Collaboration (A.M. Sirunyan et al.).
Eur.Phys.J. C77 (2017) no.12, 845.

Search for top quark partners with charge $5/3$ in proton-proton collisions at $\sqrt{s}=13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1708 (2017) 073.

Search for Low Mass Vector Resonances Decaying to Quark-Antiquark Pairs in Proton-Proton Collisions at $\sqrt{s}=13$ TeV
By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev.Lett. 119 (2017) no.11, 111802.



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

Combination of searches for heavy resonances decaying to WW , WZ , ZZ , WH , and ZH boson pairs in proton–proton collisions at $\sqrt{s}=8$ and 13 TeV

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

Phys.Lett. B774 (2017) 533-558.

Measurement of the B^{\pm} Meson Nuclear Modification Factor in Pb–Pb Collisions at $\sqrt{s_{NN}}=5.02$ TeV

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

Phys.Rev.Lett. 119 (2017) no.15, 152301.

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

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

Phys.Rev.Lett. 119 (2017) no.15, 151802.

Search for new phenomena with the M_{T2} variable in the all-hadronic final state produced in proton–proton collisions at $\sqrt{s} = 13$ TeV

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

Eur.Phys.J. C77 (2017) no.10, 710.

Search for Charged Higgs Bosons Produced via Vector Boson Fusion and Decaying into a Pair of W and Z Bosons Using pp Collisions at $\sqrt{s}=13$ TeV

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

Phys.Rev.Lett. 119 (2017) no.14, 141802.

Measurement of the triple-differential dijet cross section in proton-proton collisions at $\sqrt{s}=8$, TeV and constraints on parton distribution functions

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

Eur.Phys.J. C77 (2017) no.11, 746.

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

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

Phys.Lett. B774 (2017) 279-307.

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

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

Phys.Rev. D96 (2017) no.3, 032003.

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

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



Eur.Phys.J. C77 (2017) no.9, 578.

Measurement of the top quark mass in the dileptonic $t\bar{t}$ decay channel using the mass observables $M_{b\ell}$, M_{T2} , and $M_{b\ell\nu}$ in pp collisions at $\sqrt{s}=8$ TeV

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

Phys.Rev. D96 (2017) no.3, 032002.

Search for $\overline{t}t$ resonances in highly boosted lepton+jets and fully hadronic final states in proton-proton collisions at $\sqrt{s}=13$ TeV

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

JHEP 1707 (2017) 001.

Measurements of the $pp \rightarrow W\gamma\gamma$ and $pp \rightarrow Z\gamma\gamma$ cross sections and limits on anomalous quartic gauge couplings at $\sqrt{s}=8$ TeV

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

JHEP 1710 (2017) 072.

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

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

JHEP 1707 (2017) 013.

Search for a heavy resonance decaying to a top quark and a vector-like top quark at $\sqrt{s}=13$ TeV

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

JHEP 1709 (2017) 053.

Measurement of the jet mass in highly boosted $t\bar{t}$ events from pp collisions at $\sqrt{s}=8$ TeV

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

Eur.Phys.J. C77 (2017) no.7, 467.

Search for anomalous couplings in boosted $WW/WZ \rightarrow \ell\nu q\bar{q}$ production in proton-proton collisions at $\sqrt{s}=8$ TeV

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

Phys.Lett. B772 (2017) 21-42.

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

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

JHEP 1710 (2017) 180.



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 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

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1707 (2017) 121.

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

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1707 (2017) 014.

Measurement of double-differential cross sections for top quark pair production in pp collisions at $\sqrt{s} = 8$ TeV and impact on parton distribution functions

By CMS Collaboration (Albert M Sirunyan et al.).
Eur.Phys.J. C77 (2017) no.7, 459.

Search for standard model production of four top quarks in proton-proton collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (A.M. Sirunyan et al.).
Phys.Lett. B772 (2017) 336-358.

Measurement of the cross section for electroweak production of $Z\gamma$ in association with two jets and constraints on anomalous quartic gauge couplings in proton-proton collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B770 (2017) 380-402.

Search for associated production of a Z boson with a single top quark and for tZ flavour-changing interactions in pp collisions at $\sqrt{s}=8$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1707 (2017) 003.

Study of Jet Quenching with $Z+\text{jet}$ Correlations in Pb-Pb and ppp Collisions at $\sqrt{s}_{NN}=5.02$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Rev.Lett. 119 (2017) no.8, 082301.

Measurement of the inclusive energy spectrum in the very forward direction in proton-proton collisions at $\sqrt{s}=13$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
JHEP 1708 (2017) 046.

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

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B772 (2017) 634-656.



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 new phenomena with multiple charged leptons in proton–proton collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Vardan Khachatryan et al.).
Eur.Phys.J. C77 (2017) no.9, 635.

Measurement of the $t\bar{t}$ production cross section using events with one lepton and at least one jet in pp collisions at $\sqrt{s} = 13$ TeV

By CMS Collaboration (Albert M. Sirunyan et al.).
JHEP 1709 (2017) 051.

Search for light bosons in decays of the 125 GeV Higgs boson in proton–proton collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (V. Khachatryan et al.).
JHEP 1710 (2017) 076.

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

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Rev. D96 (2017) no.1, 012004.

Search for leptophobic Z' bosons decaying into four-lepton final states in proton–proton collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (V. Khachatryan et al.).
Phys.Lett. B773 (2017) 563-584.

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

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B772 (2017) 363-387.

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

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B770 (2017) 278-301.

Measurements of the charm jet cross section and nuclear modification factor in pPb collisions at $\sqrt{s}_{NN} = 5.02$ TeV

By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B772 (2017) 306-329

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

By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B771 (2017) 80-105.

Measurements of the associated production of a Z boson and b jets in pp collisions at $\sqrt{s} = 8$ TeV

By CMS Collaboration (V. Khachatryan et al.).
Eur.Phys.J. C77 (2017) no.11, 751.



Facultad de Artes y Ciencias

College of Arts and Sciences

Departamento de Física
Tel. (787) 265-3844

Department of Physics
Phone: (787) 265-3844

Suppression of $Upsilon(1S)$, $Upsilon(2S)$ and $Upsilon(3S)$ production in PbPb collisions at $\sqrt{s_{\text{NN}}} = 2.76 \text{ TeV}$
By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B770 (2017) 357-379.

199. Measurement of the mass difference between top quark and antiquark in pp collisions at $\sqrt{s} = 8 \text{ TeV}$
By CMS Collaboration (Serguei Chatrchyan et al.).
Phys.Lett. B770 (2017) 50-71.

Cross section measurement of t -channel single top quark production in pp collisions at $\sqrt{s} = 13 \text{ TeV}$
By CMS Collaboration (Albert M Sirunyan et al.).
Phys.Lett. B772 (2017) 752-776.

Measurement of inclusive jet cross sections in pp and PbPb collisions at $\sqrt{s_{\text{NN}}} = 2.76 \text{ TeV}$
By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Rev. C96 (2017) no.1, 015202.

Measurement of the total and differential inclusive B^+ hadron cross sections in pp collisions at $\sqrt{s} = 13 \text{ TeV}$
By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B771 (2017) 435-456.

Search for new phenomena in events with high jet multiplicity and low missing transverse momentum in proton-proton collisions at $\sqrt{s} = 8 \text{ TeV}$
By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B770 (2017) 257-267.

Coherent J/ψ photoproduction in ultra-peripheral PbPb collisions at $\sqrt{s_{\text{NN}}} = 2.76 \text{ TeV}$ with the CMS experiment
By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Lett. B772 (2017) 489-511.

Pseudorapidity dependence of long-range two-particle correlations in pPb collisions at $\sqrt{s_{\text{NN}}} = 5.02 \text{ TeV}$
By CMS Collaboration (Vardan Khachatryan et al.).
Phys.Rev. C96 (2017) no.1, 014915.
