N3AS RESEARCH PUBLICATIONS:

THROUGH 3/1/2020

CMB-HD: Astro2020 RFI Response
Neelima Sehgal, et al.
Astro 2020 White Paper
[arXiv: 2002.12714]

Screening corrections to Electron Capture Rates and resulting constraints on Primordial Magnetic Fields
Y. Luo, M. A. Famiano, T. Kajino, M. Kusakabe, A. Baha Balantekin
[arXiv: 2002.08636]

Consequences of neutrino self-interactions for weak decoupling and big bang nucleosynthesis
E. Grohs, George M. Fuller, Manibrata Sen
[arXiv: 2002.08557]

Deep Underground Neutrino Experiment (DUNE), Far Detector Technical Design Report, Volume IV Far Detector Single-phase Technology
B. Abi et al.
[arXiv: 2002.03010]

Deep Underground Neutrino Experiment (DUNE), Far Detector Technical Design Report, Volume III DUNE Far Detector Technical Coordination
B. Abi et al.
[arXiv: 2002.03008]

Deep Underground Neutrino Experiment (DUNE), Far Detector Technical Design Report, Volume II DUNE Physics
B. Abi et al.
[arXiv: 2002.03005]

Deep Underground Neutrino Experiment (DUNE), Far Detector Technical Design Report, Volume 1 Introduction to DUNE
B. Abi et al.
[arXiv: 2002.02967]

Improved Constraints on Sterile Neutrino Mixing from Disappearance Searches in the MINOS, MINOS+, Daya Bay, and Bugey-3 Experiments
P. Adamson, et al.
[arXiv: 2002.00301]

Inclination Dependence of Kilonova Light Curves from Globally Aspherical Geometries
Siva Darbha, Daniel Kasen

[arXiv: 2002.00299]

Neutrino-Antineutrino Pair Emission in Neutron-Star Matter based on a Relativistic Quantum Approach
T. Maruyama, A. Baha Balantekin, M.-K. Cheoun, T. Kajino, G. J. Mathews
[arXiv: 2001.09020]

Time of Flight and Supernova Progenitor Effects on the Neutrino Halo
John F. Cherry, et al.
[arXiv: 1912.11489]

Searches for Decays of New Particles in the DUNE Multi-Purpose Near Detector
Jeffrey M. Berryman, Andre deGouvea, Patrick J. Fox, Boris J. Kayser, Kevin J. Kelly, Jennifer L. Raaf
[arXiv: 1912.07622]

Measuring the Weak Mixing Angle in the DUNE Near Detector Complex
Andre de Gouvea, Pedro Machado, Yuber F. Perez-Gonzalez, Zahra Tibrizi
[arXiv: 1912.06658]

Constraining the Milky Way Mass Profile with Phase-Space Distribution of Satellite Galaxies
Zhao-Zhou Li, Yong-Zhong Qian, Jiaxin Han, Ting S. Li, Wenting Wang, Y. P. Jing
[arXiv: 1912.02086]

Fast Neutrino Flavor Instability in the Neutron-star Convection Layer of Three-dimensional Supernova Models
Robert Glas, H.-T. Janka, Francesco Cappozi, Manibrata Sen, Basudeb Dasgupta, Alessandro Mirizzi, Guenter Sigl
[arXiv: 1912.00274]

Co-production of light and heavy r-process elements via fission deposition
Nicole Vassh, Matthew Mumpower, Gail McLaughlin, Trevor Sprouse, Rebecca Surman
[arXiv: 1911.07766]

Neutrino Production Associated with Late Bumps in Gamma-Ray Bursts and Potential Contribution to Diffuse Flux at IceCube
Gang Guo, Yong-Zhong Qian, Meng-Ru Wu
Astrophys. J. 890, 83 (2020)
[arXiv: 1911.07568]

Studying strong phase transitions in neutron stars with gravitational waves
Katerina Chatziioannou, Sophia Han
Phys. Rev. D101, 044019 (2020)
[arXiv: 1911.07091]

On The Decaying-Sterile Neutrino Solution to the Electron (Anti)Neutrino Appearance Anomalies
Andre de Gouvea, O. L. G. Peres, Suprabh Prakash, G. V. Stenico
[arXiv: 1911.01447]

Electron-Positron Annihilation Freeze-Out in the Early Universe
L.C. Thomas, T.Dezen, E.B. Grohs, C.T. Kishimoto
[arXiv: 1910.14050]

Is Hyperon Polarization in Relativistic Heavy Ion Collisions Connected to Axial U(1) Symmetry Breaking at High Temperature?
Joseph Kapusta, Ermal Rrapaj, Serge Rudaz
[arXiv: 1910.12759]

Nebular Models of Sub-Chandrasekhar Mass Type Ia Supernovae: Clues to the origin of Ca-rich transients
Abigail Polin, Peter Nugent, Daniel Kasen
[arXiv: 1910.12434]

A Versatile and Accurate Method for Halo Mass Determination from Phase-Space Distribution of Satellite Galaxies
Zhao-Zhu Li, Yong-Zhong Qian, Jiaxin Han, Wenting Wang, Y. P. Ying
Astrophysical J. 886, 69 (2010)
[arXiv: 1910.11257]

Towards grounding nuclear physics in QCD
C. Drischler, W. C. Haxton, Kenneth McElvain, E. Mereghetti, Amy Nicholson, Pavlos Vranas, Andre Walker-Loud
To appear in Eur. Phys. J. A (2020)
[arXiv: 1910.07961]

Proceedings of The Magnificent CEvNS Workshop 2018
D. Aristizabal Sierra, et al.
[arXiv: 1910.07450]

Neutrino oscillations in supernovae: angular moments and fast instabilities
Lucas Johns, Hiroki Nagakura, George Fuller, Adam Burrows
Phys. Rev. D101, 043009 (2020)
[arXiv: 1910.05682]

The Dodelson-Widrow Mechanism In the Presence of Self-Interacting Neutrinos
André De Gouvêa, Manibrata Sen, Walter Tangarife, Yue Zhang
Phys. Rev. Lett. 124, 081802 (2020)
[arXiv: 1910.04901]

Leptonic Scalars at the LHC

Andre de Gouvea, P. H. Bhupal Dev, Bhaskar Dutta, Tathagata Ghosh, Tao Han, Yongchao Zhang
[arXiv: 1910.01132]

On the Impact of Neutrino Decays on the Supernova Neutronization-Burst Flux
André De Gouvêa, Ivan-Martinez-Soler, Manibrata Sen
Phys. Rev. D 101, 043013 (2020)
[arXiv: 1910.01127]

Sandblasting the r-Process: Spallation of Ejecta from Neutron Star Mergers
Xilu Wang, Brian D. Fields, Matthew Mumpower, Trevor Sprouse, Nicole Vassh, Rebecca Surman
submitted to ApJ
[arXiv: 1909.12889]

Reevaluating Reactor Antineutrino Anomalies with Updated Flux Predictions
J. M. Berryman and P. Huber
Phys. Rev. D 101, 015008 (2020)
[arXiv: 1909.09267]

Flavoured leptogenesis and $CP^{\mu\tau}$ symmetry
Rome Samanta, Manibrata Sen
JHEP 2001 (2020) 193
[arXiv: 1908.08126]

Entanglement and collective flavor oscillations in a dense neutrino gas
Michael J. Cervia, Amol V. Patwardhan, A. B. Balantekin, S. N. Coppersmith, Calvin W. Johnson
Phys. Rev. D 100, 083001 (2019)
[arXiv:1908.03511]

CMB-S4 Decadal Survey APC White Paper
Kevork Abazajian et al.
arXiv: [1908.01062]

Relaxation Time for Strange Quark Spin in Rotating Quark-Gluon Plasma
Joseph Kapusta, Ermal Rrapaj, Serge Rudaz
Phys. Rev. C 101, 024907 (2020)
[arXiv: 1907.10750]

White Paper on New Opportunities at the Next-Generation Neutrino Experiments (Part 1: BSM Neutrino Physics and Dark Matter)
C. A. Arguelles, et al.
[arXiv: 1907.08311]

The Simons Observatory: Astro2020 Decadal Project Whitepaper

M. H. Abitbol, et al.
Astro2020 White Paper
[arXiv: 1907.08284]

All-sky Medium Energy Gamma-ray Observatory: Exploring the Extreme Multimessenger Universe
Julie McEnery et al.
Astro2020 Science White Paper
[arXiv: 1907.07558]

CMB-S4 Science Case, Reference Design, and Project Plan
Kevork Abazajian et al.
[arXiv: 1907.04473]

Accessible Lepton-Number-Violating Models and Negligible Neutrino Masses
André De Gouvêa, We-Chih Kuang, Johannes König, Manibrata Sen
Phys. Rev. D 100, 075033 (2019)
[arXiv: 1907.02541]

The Role of Magnetic Field Geometry in the Evolution of Neutron Star Merger Accretion Discs
I.M. Christie, A. Lalakos, A. Tchekhovshoy, R. Fernandez, F. Foucart, E. Quataert, D. Kasen
MNRAS 490, 4811 (2019)
[arXiv: 1907.02079]

Neutrino Non-Standard Interactions: A Status Report
P. S. Bhupal Dev, et al.
SciPost Phys. Proc. 2, 001 (2019)
[arXiv: 1907.00991]

CMB-HD: An Ultra-Deep, High-Resolution Millimeter-Wave Survey Over Half the Sky
Neelima Sehgal, et al.
Astro2020 white paper
[arXiv: 1906.10134]

New s-process Mechanism in Rapidly-Rotating Massive Pop II Stars
Projjwal Banerjee, Alexander Heger, Yong-Zhong Qian
Astrophys. J. 887, 187 (2019)
[arXiv: 1906.07335]

The Radioactive Source Calibration System of the PROSPECT Reactor Antineutrino Detector
J. Ashenfelter, et al.
[arXiv: 1906.07244]

Presupernova neutrino signals as potential probes of neutrino mass hierarchy
Gang Guo, Yong-Zhong Qian, Alexander Heger
Phys. Lett. B 796, 126 (2019)

[arXiv: 1906.06839]

Current Status of r-Process Nucleosynthesis
T. Kajino, W. Aoki, A. B. Balantekin, R. Diehl, M. A. Famiano, G. J. Mathews
Prog. Part. Nucl. Phys. 107, 109 (2019)
[arXiv: 1906.05002]

Treating quarks within neutron stars
Sophia Han, M.A.A. Mamun, S. Lalit, C. Constantinou, M. Prakash
Phys. Rev. D 100, 103022 (2019)
[arXiv:1906.04095]

Exact solution of multi-angle quantum many-body collective neutrino flavor oscillations
Ermal Rrapaj
[arXiv: 1905.13335]

Supernova signals of light dark matter
W. DeRocco, P. W. Graham, Daniel Kasen, Gustavo Marques-Taveres, Surjeet Rajendran
Phys. Rev. D100, 075018 (2019)
[arXiv: 1905.09284]

Ultra-deep tidal disruption events: prompt self-intersections and observables
Siva Darbha, Eric R. Coughlin, Daniel Kasen, Chris Nixon
MNRAS 488, 5267 (2019)
[arXiv: 1905.07056]

Eigenvalues and eigenstates of the many-body collective neutrino oscillation problem
Amol V. Patwardhan, Michael J. Cervia, A. Baha Balantekin
Phys. Rev. D 99, 123013 (2019)
[arXiv:1905.04386]

Response to Comment on Daya Bay's definition and use of Delta m^2_{ee}
D. Adey, et al.
[arXiv: 1905.03840]

On symmetries of Hamiltonians describing systems with arbitrary spins
Michael J. Cervia, Amol V. Patwardhan, A. B. Balantekin
Int. J. Mod. Phys. E 28, 1950032 (2019)
[arXiv:1905.00082]

Neutrino-13C Cross Sections at Supernova Neutrino Energies
T. Suzuki, A.B. Balantekin, T. Kajino
J. Phys. G 46, 075103 (2019)
[arXiv:1904.11291]

Rate of dark photon emission from electron positron annihilation in massive stars

Ermal Rrapaj, Andre Sieverding, Yong-Zhong Qian
Phys. Rev. D 100, 023009 (2019)
[arXiv: 1904.10567]

Observability of sharp phase transitions in neutron stars
Sophia Han
AIP Conf. Proc. 2127, 020006 (2019)
[arXiv: 1904.09918]

Active-sterile Neutrino Oscillations in Neutrino-driven Winds: Implications for Nucleosynthesis
Zewei Xiong, Meng-Ru Wu, Yong-Zhong Qian
Astrophysical J. 880, 81 (2019)
[arXiv: 1904.09371]

Extraction of the 235U and 239Pu Antineutrino Spectra at Daya Bay
D. Adey, et al.
Phys. Rev. Lett. 123, 111801 (2019)
[arXiv: 1904.07812]

Physics with Beam Tau-Neutrino Appearance at DUNE
Andre de Gouvea, Kevin J. Kelly, G. V. Stenico, Pedro Pasquini
Phys. Rev. D100, 016004 (2019)
[arXiv: 1904.07265]

Signatures for quark matter from multi-messenger observations
Mark G. Alford, Sophia Han, Kai Schwenzer
J. Phys. G 46, 114001 (2019)
[arXiv: 1904.05471]

Using Gamma Ray Monitoring to Avoid Missing the Next Milky Way Type Ia Supernova
Xilu Wang, Brian D. Fields, Amy Yarleen Lien
MNRAS 486, 2910 (2019)
[arXiv: 1904.04310]

Double Detonations with Thin, Modestly Enriched Helium Layers Can Make Normal Type Ia Supernovae
Dean M. Townsley, Broxton J. Miles, Ken J. Shen, Daniel Kasen
Astrophys. J. 878, L38 (2019)
[arXiv: 1903.10960]

Multimessenger Universe with Gravitational Waves from Binaries
B. S. Sathyaprakash, et al.
Astro2020 Science Paper
[arXiv: 1903.09277]

Big Bang Nucleosynthesis and Neutrino Cosmology

Evan B. Grohs, Richard Bond, Ryan J. Cooke, George M. Fuller, Joel Meyers, and Mark W. Paris
Astro2020 Science Paper
[arXiv: 1903.09187]

Self-interacting sterile neutrino dark matter: the heavy-mediator case
Lucas Johns, George Fuller
Phys. Rev. D100, 023533 (2019)
[arXiv: 1903.08296]

Messengers from the early universe: Cosmic neutrinos and other light relics
Daniel Green et al.
Astro2020 White Paper
[arXiv: 1903.04763]

Multi-Messenger Astronomy with Extremely Large Telescopes
Ryan Chornock, et al.
Astro2020 White Paper
[arXiv: 1903.04629]

Gravity and Light: Combining Gravitational Wave and Electromagnetic Observations in the 2020s
R. J. Foley, et al.
Astro2020 White Paper
[arXiv: 1903.04553]

Topological background discrimination in the PandaX-III neutrinoless double beta decay experiment
J. Galan, et al.
To appear in J. Phys. G (2020)
[arXiv: 1903.03979]

Neutrino Mass from Cosmology: Probing Physics Beyond the Standard Model
Cora Dvorkin, et al.
Astro2020 white paper
[arXiv: 1903.03689]

Science from an ultra-deep, high-resolution millimeter-wave survey
Neelima Sehgal et al.
Astro2020 Science Paper
[arXiv: 1903.03263]

Neutrino quantum kinetics in compact objects
Sherwood A. Richers, Gail C. McLaughlin, James P. Kneller, Alexey Vlasenko
Phys. Rev. D 99, 123014 (2019)

[arXiv:1903.00022]

A high precision calibration of the nonlinear energy response at Daya Bay
A.Adey, et al.
NIM A940, 230 (2019)
[arXiv: 1902.08241]

A Low Mass Optical Grid for the PROSPECT Reactor Antineutrino Detector
J. Ashenfelter, et al.
JINST 14, P04014 (2019)
[arXiv: 1902.06430]

Symmetries of Neutrino Physics
A.B. Balantekin
AIP Conf. Proc. 2150, no. 1, 020007 (2019)
[arXiv:1902.04210]

Nuclear Physics without High-Momentum Potentials: Constructing the Nuclear Effective Interaction Directly from Scattering Observables
K. S. McElvain, W. C. Haxton
Phys. Lett. B797, 134880 (2019)
[arXiv: 1902.03543]

Catching element formation in the act
Chris L. Fryer, et al.
Astro2020 White Paper
[arXiv: 1902.02915]

The APR equation of state for simulations of supernovae, neutron stars and binary mergers
A.S. Schneider, C. Constantinou, B. Muccioli, M. Prakash
Phys. Rev. C100, 025803 (2019)
[arXiv: 1901.09652]

Lithium-loaded Liquid Scintillator Production for the PROSPECT experiment
J. Ashenfekter, et al.
JINST 14, P03026 (2019)
[arXiv: 1901.05569]

Detection of Circumstellar Helium in Type Iax Progenitor Systems
Wynn Jacobson-Galan, et al.
To appear in MNRAS
[arXiv: 1812.11692]

Measurement of the Antineutrino Spectrum from 235U Fission at HFIR with PROSPECT
J. Ashenfelter, et al.
Phys. Rev. Lett. 122, 251801 (2019)

[arXiv: 1812.10877]

Role of fluctuations on the pairing properties of nuclei in the random spacing model
M. A. A. Mamun, C. Constantiou, M. Prakash
[arXiv: 1812.09988]

Comparing Treatments of Weak Reactions with Nuclei in Simulations of Core-collapse Supernovae
Hiroki Nagakura, Shun Furusawa, Hajime Togashi, Sherwood Richers, Kohsuke Sumiyoshi, Shoichi Yamada
Astrophys. J. Supp. Ser. 240, 38 (2019)
[arXiv:1812.09811]

Spitzer Mid-Infrared Detections of Neutron Star Merger GW170817 Suggests Synthesis of the Heaviest Elements
Mansi M. Kasliwal, et al.
Accepted in MNRAS
[arXiv: 1812.08708]

Future Opportunities in Accelerator-based Neutrino Physics
Andrea Dell'Acqua, et al.
[arXiv:1812.06739]

Physics of Luminous Transient Light Curves: A New Relation Between Peak Time and Luminosity
David K. Khatami, Daniel Kasen
[arXiv: 1812.06522]

Simultaneous Fitting of Neutron Star Structure and Cooling Data
Spencer Beloin, Sophia Han, Andrew W. Steiner, Khorgolkhuu Odbadrakh
Phys. Rev. C 100, 055801 (2019)
[arXiv:1812.00494]

The Plane's the Thing: The Case for Wide-Fast-Deep Coverage of the Galactic Plane and Bulge
Jay Strader et al.
White paper on LSST cadence optimization
[arXiv: 1811.12433]

K2 Observations of SN 2018oh Reveal a Two-Component Rising Light Curve for a Type Ia Supernova
G. Dimitriadis, et al.
Astrophys. J. Letts. 870, L1 (2019)
[arXiv: 1811.10061]

Photometric and Spectroscopic Properties of Type Ia Supernova 2018oh with Early Excess Emission from the Kepler 2 Observations

W. Li, et al.
Astrophys. J. 870, 12 (2019)
[arXiv: 1811.10056]

Observational Predictions for Sub-Chandrasekhar Mass Explosions: Further Evidence for Multiple Progenitor Systems for Type Ia Supernovae
Abigail Polin, Peter Nugent, Daniel Kasen
Astrophys. J. 873, 1 (2019)
[arXiv: 1811.07127]

Positrons and 511 keV radiation as tracers of recent binary neutron star mergers
George Fuller, Alexander Kusenko, David Radice, Volodymyr Takhistov
Phys. Rev. Lett. 122, 121101 (2019)
[arXiv: 1811.00133]

Tidal deformability with sharp phase transitions in (binary) neutron stars
Sophia Han & Andrew W. Steiner
Phys. Rev. D 99, 083014 (2019)
[arXiv: 1810.10967]

A tale of two dark neighbors: WIMP n' axion
Suman Chatterjee, Anirban Das, Tousik Samui, and Manibrata Sen
Phys. Rev. D 100, 115050 (2019)
[arXiv: 1810.09471]

Using excitation-energy dependent fission yields to identify key fissioning nuclei in r-process nucleosynthesis
Nicole Vassh, et al.
J. Phys. G 46, 065202 (2019)
[arXiv: 1810.08133]

Can magnetic fields (de)stabilize twin stars?
R.O. Gomes, V. Dexheimer, Sophia Han, S. Schramm
Monthly Notices of the Royal Astronomical Society, 485, 4873 (2019)
[arXiv: 1810.07046]

Gravitational interactions of stars with supermassive black hole binaries - II. Hypervelocity stars
Siva Darbha, Eric R. Coughlin, Daniel Kasen, Eliot Quataert
MNRAS 482, 2132 (2019)
[arXiv: 1810.05312]

Helium giant stars as progenitors of rapidly fading Type Ibc supernovae
Io Kleiser, Jim Fuller, Dan Kasen
MNRAS 481, L141 (2018)
[arXiv: 1809.09103]

Dense matter equation of state for neutron star mergers
S. Lalit, M. A. A. Mamun, C. Constantiou, M. Prakash
European Phys. J. A55, 10 (2019)
[arXiv: 1809.08126]

Dark Tridents at Off-Axis Liquid Argon Neutrino Detectors
Andre de Gouvea, Patrick J. Fox, Roni Harnik, Kevin J. Kelly, Yue Zhang
[arXiv: 1809.06388]

Sensitivity of carbon and oxygen yields to the triple-alpha resonance in massive stars
Lillian Huang, Fed C. Adams, Evan Grohs
Astropart. Phys. 105, 13 (2019)
[arXiv: 1809.05218]

Nuclear Processes in Other Universes: Varying the Strength of the Weak Force
Alex R. Howe, Evan Grohs, Fred C. Adams
Phys. Rev. D 98, 063014 (2018)
[arXiv: 1809.05128]

Search for a time-varying electron antineutrino signal at Daya Bay
D. Adey, et al.
Phys. Rev. D98, 092013 (2018)
[arXiv: 1809.04660]

Symmetries and Algebraic Methods in Neutrino Physics
A.B. Balantekin
J. Phys. G45, 113001 (2018)
[arXiv: 1809.02539]

Measurement of electron antineutrino oscillation with 1958 days of operation at Daya Bay
D. Adey, et al.
Phys. Rev. Lett. 121, 241805 (2018)
[arXiv: 1809.02261]

FRIB and the GW170817 Kilonova
Ani Aprahamian *et al.*
Proceedings of the FRIB Theory Alliance Program
[arXiv: 1809.00703]

Improved Measurement of the Reactor Antineutrino Flux at Daya Bay
D. Adey, et al.
Phys. Rev. D100, 052004 (2019)
[arXiv: 1808.10836]

Addressing the Majorana V. Dirac Question with Neutrino Decays
A.Baha Balantekin, André de Gouvêa, Boris, Kayser

Phys. Lett. B789, 488 (2019)
[arXiv: 1808.10518]

The Simons Observatory: Science goals and forecasts
Peter Ade, et al.
Astro2020 Science White Paper
[arXiv: 1808.07445]

Long-term GRMHD Simulations of Neutron Star Merger Accretion Disks: Implications for Electromagnetic Counterparts
Rodrigo Fernandez, Alexander Tchekhovskoy, Eliot Quataert, Francois Foucart, Daniel Kasen
MNRAS 482, 3373 (2019)
[arXiv: 1808.00461]

The PROSPECT Reactor Antineutrino Experiment
J. Ashenfelter, et al.
NIM A922, 287 (2019)
[arXiv: 1808.00097]

Seeing Double: ASASSN-18bt Exhibits a Two-Component Rise in the Early-Time K2 Light Curve
B. J. Shappee, et al.
Astrophys. J. 870, 13 (2019)
[arXiv: 1807.11526]

The DUNE Far Detector Interim Design Report, Volumes 1-3
B. Abi, et al.
[arXiv: 1807.10340, 1807.10334, 1807.10327]

Radioactive Heating and Late Time Kilonova Light Curves
Daniel Kasen, Jennifer Barnes
Astrophys. J. 876, 128 (2019)
[arXiv: 1807.03319]

PandaX-II Constraints on Spin-Dependent WIMP-Nucleon Effective Interactions
J. Xia, et al.
Phys. Lett. B792, 193 (2019)
[arXiv: 1807.01936]

Constraints on Axion-like Particles and Nucleon Pairing in Dense Matter from the Hot Neutron Star in HESS J1731-347
Mikhail V. Beznogov, Ermal Rrapaj, Sanjay Reddy
Phys. Rev. C98, 035802 (2018)
[arXiv: 1806.07991]

Jet Dynamics in Compact Object Mergers: GW170817 Likely had a Successful Jet
Paul Duffel, Eliott Quataert, Daniel Kasen, Hannah Klion

Astrophys. J. 866, 3 (2018)
[arXiv: 1806.10616]

First search for short-baseline neutrino oscillations at HFIR with PROSPECT
J. Ashenfelter, et al.
Phys. Rev. Lett. 121, 251802 (2018)
[arXiv: 1806.02784]

Neutrino Spectral Split in the Exact Many Body Formalism
S. Birol, Y. Pehlivan, A. B. Balantekin, T. Kajino
Phys. Rev. D98, 083002 (2018)
[arXiv: 1805.11767]

Shining Light on the Mass Scale and Nature of Neutrinos with eγ→evv
Jeffrey M. Berryman, Andre de Gouvea, Kevin J. Kelly, Michael Schmitt
Phys. Rev. D98, 016009 (2018)
[arXiv: 1805.10294]

Constraints on the neutron star equation of state from AT2017gfo using radiative transfer simulations
Michael W. Coughlin, et al.
To appear in MNRAS
[arXiv: 1805.09371]

Performance of a segmented 6Li-loaded liquid scintillator detector for the PROSPECT experiment
J. Ashenfelter, et al.
JINST 13, P06023 (2018)
[arXiv: 1805.09245]

s-Process in Massive Carbon-Enhanced Metal-Poor Stars
Projjwal Banerjee, Yong-Zhong Qian, Alexander Heger
MNRAS 480, 4963 (2018)
[arXiv: 1805.04306]

Pairing in Nuclei: Exact Solutions
A.B. Balantekin
JPS Conf. Proc. 23, 012022 (2018)
[arXiv: 1805.00970]

On the Properties of Neutrinos
A.B. Balantekin, Boris Kayser
[arXiv:1805.00922]

Neutrino signal from proto-neutron star evolution: Effects of opacities from charged-current-neutrino interactions and inverse neutron decay

Tobias Fischer, et al.
Phys. Rev. C101, 025804 (2020)
[arXiv: 1804.10890]

A Fast-Evolving, Luminous Transient Discovered by K2/Kepler
A.Rest, et al.
Nature Astronomy 2, 307 (2018)
[arXiv: 1804.04641]

Production of Mo and Ru isotopes in neutrino-driven winds: implications for solar abundances and presolar grains
Julia Bliss, Almudena Arcones, Yong-Zhong Qian
Astrophys. J. 866, 105 (2018)
[arXiv: 1804.03947]

Nebular Spectroscopy of the `Blue Bump' Type Ia Supernova 2017cbv
D. J. Sand, et al.
Astrophys. J. 863, 24 (2018)
[arXiv: 1804.03666]

Gravitational interactions of stars with supermassive black hole binaries. I. Tidal disruption events
Siva Darbha, Eric R. Coughlin, Daniel Kasen, Eliot Quataert
MNRAS 477, 4009 (2018)
[arXiv: 1802.07850]

Stellar binaries incident on supermassive black hole binaries: implications for double tidal disruption events, calcium-rich transients, and hypervelocity stars
Eric R. Coughlin, Siva Darbha, Daniel Kasen, Eliot Quataert
Astrophys. J. Letts. 863, L24 (2018)
[arXiv: 1802.07262]

Interaction of a Supernova with a Circumstellar Disk
Austin T. McDowell, Paul C. Duffell, Daniel Kasen
Astrophys. J. 856, 29 (2018)
[arXiv: 1802.05152]

Particle-Hole Mirror Symmetries around the Half-Filled Shell: The Quantum Numbers and Algebraic Structure of Composite Fermions
W. C. Haxton, D. J. Haxton, B. Kang
Phys. Rev. B98, 115140 (2018)

Lepton-Number-Charged Scalars and Neutrino Beamstrahlung
Jeffrey M. Berryman, Andre de Gouvea, Kevin J. Kelly, Yue Zhang
Phys. Rev. D97, 075030 (2018)
[arXiv: 1802.00009]

Neutrinos, supernovae, and the origin of the heavy elements
Yong-Zhong Qian
Sci. China-Phys. Mech. Astron. 61, 049501 (2018)
[arXiv: 1801.09554]

Origin of a maximum of astrophysical S factor in heavy-ion fusion reactions at deep subbarrier energies
K. Hagino, A. B. Balantekin, N. W. Lwin, E. S. Z. Thein
Phys. Rev. C97, 034623 (2018)
[arXiv: 1801.09393]

Matter-neutrino resonance in a multi-angle neutrino bulb model
A. Vlasenko, G. C. McLaughlin
Phys. Rev. D97, 083011(2018)
[arXiv: 1801.07813]

Universes without the Weak Force: Astrophysical Processes with Stable Neutrons
Evan B. Grohs, Alex R. Howe, Fred C. Adams
Phys. Rev. D97, 043003 (2018)
[arXiv: 1801.06081]

Models of bright nickel-free supernovae from stripped massive stars with circumstellar shells
Io Kleiser, Daniel Kasen, Paul Duffell
MNRAS 475, 3152 (2018)
[arXiv: 1801.01943]

Evidence for Sub-Chandrasekhar Mass Type Ia Supernovae from an Extensive Survey of Radiative Transfer Models
Daniel Goldstein, Daniel Kasen
Astrophys. J. 857, 97 (2018)
[arXiv: 1801.00789]

The Photon in Dense Nuclear Matter I: Random Phase Approximation
Stephan Stetina, Ermal Rrapaj, Sanjay Reddy
Phys. Rev. C97, 045801 (2018)
[arXiv: 1712.05447]

Multidimensional Models of Type Ia Supernova Nebular Spectra: Strong Emission Lines from Stripped Companion Gas Rule Out Classic Single Degenerate Systems
Janos Botyanszki, Daniel Kasen, Tomasz Plewa
Astrophys. J. Lett. 852, L6 (2018)
[arXiv: 1712.03274]

Discrete Effects in Stellar Feedback: Individual Supernovae, Hypernovae, and IMF Sampling in Dwarf Galaxies

Kung-Yi Su, et al.
MNRAS 480, 1666 (2018)
[arXiv: 1712.02795]

Eigenvector continuation with subspace learning
Dillon Frame, Rongzheng He, Ilse Ipsen, Daniel Lee, Dean Lee, Ermal Rrapaj
Phys. Rev. Lett. 121, 032501 (2018)
[arXiv: 1711.07090]

New Neutron-Capture Site in Massive Pop III and Pop II Stars as a Source for Heavy Elements in the Early Galaxy
Projjwal Banerjee, Yong-Zhong Qian, Alexander Heger
Astrophys. J. 865, 120 (2018)
[arXiv: 1711.05964]

Facets of Neutrino-Nucleus Interactions
A.B. Balantekin
[arXiv: 1711.03667]

Energetic eruptions leading to a peculiar hydrogen-rich explosion of a massive star
Iair Arcavi, et al.
Nature 551, 210 (2017)
[arXiv: 1711.02671]

Cosmogenic neutron production at Daya Bay
F. P. An, et al.
Phys. Rev. D97, 052009 (2018)
[arXiv: 1711.00588]

Determination of Dark Matter Halo Mass from Dynamics of Satellite Galaxies
Zhao-Zhu Li, Y. P. Jing, Yong-Zhong Qian, Zhen Yuan, Dong-Hai Zhao
Astrophys. J. 850, 116 (2017)
[arXiv: 1710.08003]

The Rapid Reddening and Featureless Optical Spectra of the optical counterpart of GW170817, AT 2017gfo, During the First Four Days
Curtis McCully, et al.
Astrophys. J. Lett. 848, L32 (2017)
[arXiv: 1710.05853]

Optical emission from a kilonova following a gravitational-wave-detected neutron-star merger
Iair Arcavi, et al.
Nature 551, 64 (2017)
[arXiv: 1710.05843]

Optical Follow-up of Gravitational-wave Events with Las Cumbres Observatory

Iair Arcavi, et al.
Astrophys. J. Lett. 848, L33 (2017)
[arXiv: 1710.05842]

The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/VIRGO GW170817. II. UV, Optical, and Near-IR Light Curves and Comparison to Kilonova Models
P. S. Cowperthwaite, et al.
Astrophys. J. Lett. 848, L17 (2017)
[arXiv: 1710.05840]

A gravitational-wave standard siren measurement of the Hubble constant
B. P. Abbott, et al.
Nature 551, 85 (2017)
[arXiv: 1710.05835]

Origin of the heavy elements in binary neutron-star mergers from a gravitational wave event
Daniel Kasen, Brian Metzger, Jennifer Barnes, Eliot Quataert, Enrico Ramirez-Ruiz
Nature 551, 80 (2017)
[arXiv: 1710.05463]

The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/Virgo GW170817. I. Dark Energy Camera Discovery of the Optical Counterpart
M. Soares-Santos, et al.
Astrophys. J. Lett. 848, L16
[arXiv: 1710.05459]

The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/VIRGO GW170817. III. Optical and UV Spectra of a Blue Kilonova From Fast Polar Ejecta
M. Nicholl, et al.
Astrophys. J. Lett. 848, L18
[arXiv: 1710.05456]

The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/VIRGO GW170817. IV. Detection of Near-infrared Signatures of r-process Nucleosynthesis with Gemini-South
R. Chornock, et al.
Astrophys. J. Lett. 848, L19 (2017)
[arXiv: 1710.05454]

A Neutron Star Binary Merger Model for GW170817/GRB170817a/SSS17a
Ariadna Murguia-Burthier, et al.
Astrophys. J. Lett. 848, L34 (2017)
[arXiv: 1710.05453]

Swope Supernova Survey 2017a (SSS17a), the Optical Counterpart to a Gravitational Wave Source
D. A. Coulter, et al.

Science 358, 1556 (2017)
[arXiv: 1710.05452]

Light Curves of the Neutron Star Merger GW170817/SSS17a: Implications for R-Process Nucleosynthesis
M. R. Drout, et al.
Science 358, 1570 (2017)
[arXiv: 1710.05443]

The Unprecedented Properties of the First Electromagnetic Counterpart to a Gravitational Wave Source
Matthew R. Siebert, et al.
Astrophys. J. Letts. 848, L26 (2017)
[arXiv: 1710.05440]

The Old Host-Galaxy Environment of SSS17a, the First Electromagnetic Counterpart to a Gravitational Wave Source
Y.-C. Pan, et al.
Astrophys. J. Letts. 848, L30 (2017)
[arXiv: 1710.05439]

Illuminating Gravitational Waves: A Concordant Picture of Photons from a Neutron Star Merger
M. M. Kasliwal, et al.
Science 358, 6370 (2017)
[arXiv: 1710.05436]

Electromagnetic Evidence that SSS17a is the Result of a Binary Neutron Star Merger
Charles D. Kilpatrick, et al.
Science 358, 1583 (2017)
[arXiv: 1710.05434]

Early Spectra of the Gravitational Wave Source GW170817: Evolution of a Neutron Star Merger
B. J. Shappee, et al.
Science 358, 1574 (2017)
[arXiv: 1710.05432]

Collective Neutrino Oscillations and Nucleosynthesis
A.B. Balantekin
[arXiv: 1710.04108]

A physical model of mass ejection in failed supernovae
Eric G. Coughlin, Eliot Quataert, Rodrigo Fernandez, Eliot Quataert
MNRAS 477, 1225 (2018)
[arXiv: 1710.01746]

Neutrino vs. Antineutrino Oscillation Parameters at DUNE and Hyper-Kamiokande
Andre de Gouvea, Kevin J. Kelly
[arXiv: 1709.06090]

Strange mechanics of the neutrino flavor pendulum
Lucas Johns, George Fuller
Phys. Rev. D97, 023020 (2018)
[arXiv: 1709.00518]

Neutrino Spectra from Nuclear Weak Interactions in sd-Shell Nuclei Under Astrophysical Conditions
G. Wendell Misch, Yang Sun, George M. Fuller
Astrophys. J. 852, 43 (2018)
[arXiv: 1708.08792]

Neutrino Burst-Generated Gravitational Radiation From Collapsing Supermassive Stars
J.-T. Li, George Fuller, Chad Kishimoto
Phys. Rev. D98, 023002 (2018)
[arXiv: 1708.05292]

A GRB and Broad-lined Type Ic Supernova from a Single Central Engine
Jennifer Barnes, et al.
Astrophys. J. 860, 38 (2018)
[arXiv: 1708.02630]

Double-folding potentials from chiral effective field theory
V. Durant, P. Capel, L. Huth, A. B. Balantekin, A. Schwenk
Phys. Lett. B782, 668 (2018)
[arXiv: 1708.02527]

Seasonal Variation of the Underground Cosmic Muon Flux Observed at Daya Bay
F. P. An, et al.
JCAP 01, 001 (2018)
[arXiv: 1708.01265]

Precise Time Delays from Strongly Gravitationally Lensed Type Ia Supernovae with Chromatically Microlensed Images
Daniel Goldstein, Peter Nugent, Daniel Kasen, Thomas Collett
Astrophys. J. 855, 22 (2018)
[arXiv: 1708.00003]

Possible effects of collective neutrino oscillations in the three flavor multi-angle simulations on supernova vp process
H. Sasaki, T. Kajino, T. Takiwaki, T. Hayakawa, A. B. Balantekin, Y. Pehlivan
Phys. Rev. D96, 043013 (2018)
[arXiv: 1707.09111]

What Sets the Line Profiles in Tidal Disruption Events?
Nathaniel Roth, Daniel Kasen
Astrophys. J. 855, 54 (2018)
[arXiv: 1707.02993]

Axion Production from Landau Quantization in the Strong Magnetic Field of Magnetars
T. Maruyama, A. B. Balantekin, M.-K. Cheoun, T. Kajino, G. J. Mathews
Phys. Lett. B779, 160 (2018)
[arXiv: 1707.00384]

Early Blue Excess from the Type Ia Supernova 2017cbv and Implications for Its Progenitor
Griffin Hosseinzadeh, et al.
Astrophys. J. Lett. 845, L11 (2017)
[arXiv: 1706.08990]

The Single-Phase ProtoDUNE Technical Design Report
B. Abi, et al.
[arXiv: 1706.07081]

A Detailed Comparison of Multidimensional Boltzmann Neutrino Transport Methods in Core-Collapse Supernovae
Sherwood Richers, Hiroki Nagakura, Christian D. Ott, Kohsuke Sumiyoshi, Shoichi Yamada
Astrophys. J. 847, 133 (2017)
[arXiv: 1706.06187]

Insights into neutrino decoupling gleaned from considerations of the role of electron mass
Evan Grohs and George M. Fuller
Nucl. Phys. B923, 222 (2017)
[arXiv: 1706.03391]

NuSTEC White Paper: Status and Challenges of Neutrino-Nucleus Scattering
L. Alvarez-Ruso, et al.
Prog. Part. Nucl. Phys. 100, 1 (2018)
[arXiv: 1706.03261]

PTF11kx: A Type Ia Supernova with Hydrogen Emission Persisting After 3.5 Years
Melissa L. Graham, et al.
Astrophys. J. 843, 102 (2017)
[arXiv: 1706.02266]

Sub-Chandrasekhar-mass white dwarf detonations revisited
Ken J. Shen, Daniel Kasen, Broxton Miles, Dean Townsley
Astrophys. J. 842, 52 (2018)
[arXiv: 1706.01898]

Pairing properties from random distributions of single-particle energy levels
A.A. Mamun, C. Constantinou, M. Prakash
Phys. Rev. C97, 064324 (2018)
[arXiv: 1705.09351]

How do Type Ia Supernova Nebular Spectra Depend on Explosion Properties? Insights from Systematic non-LTE Modeling
Janos Botyanszki, Daniel Kasen
Astrophys. J. 845, 176 (2017)
[arXiv: 1704.06275]

A New Paradigm for Hadronic Parity Nonconservation and its Experimental Implications
Susan Gardner, W. C. Haxton, Barry R. Holstein
Ann. Rev. Nucl. Part. Sci. 67, 69 (2017)

Primordial Black Holes and r-Process Nucleosynthesis
George Fuller, Alexander Kusenko, Volodymyr Takhistov
Phys. Rev. Lett. 119, 061101 (2017)
[arXiv: 1704.01129]

Evolution of the Reactor Antineutrino Flux and Spectrum at Daya Bay
F. P. An, et al.
Phys. Rev. Lett. 118, 251801 (2017)'
[arXiv: 1704.01082]

Signatures of hypermassive neutron star lifetimes on r-process nucleosynthesis in the disk ejecta from neutron star mergers
Jonas Lippuner, et al.
MNRAS 472, 904 (2017)
[arXiv: 1703.06216]

Neutrino Flavor Evolution in Neutron Star Mergers
James Y. Tian, Amol V. Patwardhan, and George M. Fuller
Phys. Rev. D 96, 043001 (2017)
[arXiv: 1703.03039]

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