

**"Brookhaven Forum 2019: Particle Physics and Cosmology in the 2020's,"  
Brookhaven National Laboratory, Upton, NY, September 25-27, 2019**

<b>Wednesday, September 25, 2019</b>		
<b>PLENARY PROGRAM I, Berkner Hall, Auditorium, Chair: M-A Pleier (Talks are 35 + 5 minutes)</b>		
<b>1:20-1:30 p.m.</b>	Welcome	D. Denisov (BNL)
<b>1:30-2:10 p.m.</b>	Highlights from Beyond the Standard Model Searches at ATLAS and CMS	S. Dildick (Texas A&M/CMS)
<b>2:10-2:50 p.m.</b>	SM highlights from ATLAS and CMS	M. Leblanc (U Arizona/ATLAS)
<b>2:50-3:30 p.m.</b>	Current Status and Future Prospects for Gravitational Wave Astrophysics	K. Chatziioannou (Flatiron)
<b>3:30-4:00 p.m.</b>	Coffee Break (BSA)	Berkner Hall Lobby
<b>4:00-5:00 p.m.</b>	<p><i><b>Brookhaven Science Associates Distinguished Lecture</b></i></p> <p><i><b>Title: "Seeing the Unseeable: Making the First Image of a Black Hole"</b></i></p> <p><i><b>Presented by Sheperd Doeleman</b></i>  <i><b>(Harvard-Smithsonian Center for Astrophysics</b></i>  <i><b>Director, Event Horizon Telescope)</b></i></p>	<b>Berkner Hall Auditorium Hosted by Christie Nelson (BNL)</b>
<b>5:00-6:00 p.m.</b>	<b>BSA Social Hour</b> <b>(Light fare and refreshments will be served)</b>	<b>Berkner Hall Lobby</b>

<b>Thursday, September 26, 2019</b>		
<b>PLENARY PROGRAM I, Berkner Hall, Auditorium, Chair: D. Jaffe (BNL)</b>		
<b>9:00-9:40 a.m.</b>	Recent Highlights from Flavor Physics	H. Jawahery (UMD/LHCb)
<b>9:40-10:20 a.m.</b>	Dark Matter Theory Overview	M. Lisanti (Princeton)
<b>10:20-10:50 a.m.</b>	Coffee Break	Berkner Hall Lobby
<b>PLENARY PROGRAM II, Berkner Hall, Auditorium, Chair: W. Marciano (BNL)</b>		
<b>10:50-11:30 a.m.</b>	Dark Sector Phenomenology	I. Shoemaker (VT)
<b>11:30-12:10 p.m.</b>	Status of Muon g-2	L. Jin (UCONN)
<b>12:10-1:30 p.m.</b>	Lunch (on your own)	

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<b>Thursday, September 26, 2019 (continued)</b>			
<b>1:30-3:10 p.m. PARALLEL SESSION I, Berkner Hall (Talks are 15 + 5 minutes)</b>			
<b>DM/Neutrino Location: Room A Chair: G. Mohlabeng</b>	<b>NP Searches/BSM Location: Room B Chair: C-Y Chen</b>	<b>Flavor/CP Location: Room C Chair: B. Bhattacharya</b>	
A. Filimonova: Long Live the Higgs Portal!	O. Witzel: Mass-split Composite Higgs Model with Large Scale Separation	B. Wang: Delta $m_K$	
X. Ji: PROSPECT	G. Chauhan: Vacuum Stability and Symmetry Breaking in Left-Right Symmetric Model	E. Nakano: B Leptonic Decays: Results at Belle and prospects at Belle II	
J. Gherlein: IceCube Bounds on Sterile Neutrinos Above 10 eV	S. Bar-Shalom: Leptoquark Phenomenology in the EFT	U. Gebauer: B Semi-leptonic Decays at Belle/Belle II	
H. Yu: Wire-cell - A Software Effort on Liquid Argon TPC Event Reconstruction	C. Rasmussen: Antihydrogen Spectroscopy & Antimatter Gravity in the ALPHA Experiment at CERN	B. Maddock: Signatures of Flavorful 2HDM's	
	S. Bansal: Constraints on R-Parity Violating Couplings from $>$ Drell-Yan Data at the LHC		
<b>3:10-3:40 p.m. Coffee Break and Event Photo</b>		<b>Berkner Hall Lobby</b>	
<b>3:40-5:20 p.m. PARALLEL SESSION II, Berkner Hall (Talks are 15 + 5 minutes)</b>			
<b>DM/Neutrino Location: Room A Chair: T. Brinkmann</b>	<b>NP Searches/BSM Location: Room B Chair: A. Angelescu</b>	<b>Flavor/CP Location: Room C Chair: A. Di Canto</b>	<b>Cosmology Location: Room D Chair: C. Rasmussen</b>
H. Abdulrahman: A Study of Density Perturbations for the Unified DM & Dark Energy in Chaplygin Gas Cosmology	E. Brost: Di-Higgs, di-boson General Resonance Search and Non-resonant di-Higgs	J. Lomba Castro: B-flavour Anomalies in $b \rightarrow sll$ and $b \rightarrow clnu$ Transitions at LHCb	K. Deshpande: Supersymmetric Inflation from the Fifth Dimension
D. Gift: Light Dark Matter Direct Detection with SENSEI	G. Alonso Alvarez: A Baryogenesis Model to be Tested in the 2020's	P. Huang: Addressing the $q^2$ Dependence in B-anomalies	J. Setford: Signatures of Mirror Stars
G. Mohlabeng: GeV Scale Messengers of Planck Scale Dark Matter	S. Homiller: Higgs Bosons with Large Couplings to Light Quarks	K. Nakagiri: Anomalies from RK and $RK^*$ at Belle/Belle II	J. H. Chang: Exotic Compact Objects in a Dissipative Dark Sector
Y. Sui: Zee-Burst: Non-Standard Interactions in IceCube	J. Zeng: Precision Electroweak Measurements	C-Y Chen: Top Quark Decay at Next-to-leading Order in the Standard Model Effective Field Theory	D. Jamieson: Separate Universe Techniques from High to Low Density
M. Sholapurkar: The Relation Between the Migdal effect and DM-electron Scatterings in Atoms and Semiconductors		A. Khawaja: Theoretical Conservation of Lepton Family and Representation Theories	

<b>Coach Transportation – Berkner Hall @ 6:00 p.m.</b> <i>**Please arrive about 15 minutes prior for boarding.</i> <b>Dinner 6:00-9:00 p.m.</b>	<b>BF2019 Banquet Dinner at Majestic Gardens (included in reg. fee)</b> <b>Transportation will be provided for all attendees via Hampton Jitney</b> <i>The coach bus will depart Berkner Hall promptly at 6:00pm. The bus will then depart Majestic Gardens at 8:30pm and return to Berkner Hall at 9:00pm. For those staying at the Hampton Inn, the hotel shuttle has conveniently been scheduled to transport attendees from Berkner Hall back to the hotel at 9:00pm.</i>
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**"Brookhaven Forum 2019: Particle Physics and Cosmology in the 2020's,"  
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<b>Friday, September 27, 2019</b>		
<b>PLENARY PROGRAM I, Berkner Hall, Auditorium, Chair: E. Sheldon (BNL)</b>		
<b>9:00-9:40 a.m.</b>	Present Status and Future Outlook of Neutrino Theory	M. Concepcion Gonzalez-Garcia (SBU)
<b>9:40-10:20 a.m.</b>	Cosmology, Highlights and Future Prospects	C. Dvorkin (Harvard)
<b>10:20-10:40 a.m.</b>	Coffee Break	Berkner Hall Lobby

<b>10:40-12:20 p.m. PARALLEL SESSION, Berkner Hall (Talks are 15 + 5 minutes)</b>		
<b>DM/Neutrino Location: Room A Chair: P. Huang</b>	<b>NP Searches/BSM Location: Room B Chair: S. Bar-Shalom</b>	<b>Flavor/CP Location: Room C Chair: E. Brost</b>
P. Wang: Thermal Relic Targets with Exponentially Small Couplings	A. Angelescu: Multistep Strongly First-order Phase from New TeV-scale Fermions	A. Di Canto: Measurements of CPV in b and c Decays at LHCb
Z. Wu: Searches for Dark Matter at ATLAS and CMS	C. Dallapiccola: Search for BSM Physics using Challenging Signatures (Exotics, Emerging jets, SUSY RPV Searches)	S. Schacht: Charm CP Violation
G. Kurup: Conformal Freeze-In DM	M. Ekhterachian: RS Phase Transition, Fixed Points, and Gravitational Waves	C-L Hsu: CPV in B Decays; Results at Belle and Prospects at Belle II
T. Brinckmann: Implications of Future Large-scale Structure Observations for the Neutrino Mass Sum	D. Tuckler: New Signatures of Light Electroweakino Sectors	B. Bhattacharya: Studying CP Violation in Angular Distributions of Semi-leptonic B Decays
P. Du: Cosmological Signals of Neutrino Mass and Lifetime		

<b>12:20-1:30 p.m.</b>	Lunch	Berkner Hall Cafeteria
<b>PLENARY PROGRAM II, Berkner Hall, Auditorium, Chair: M. Concepcion Gonzalez-Garcia (SBU)</b>		
<b>1:30-2:10 p.m.</b>	Long-Baseline Neutrino Experiments	A. Marino (UColorado/DUNE)
<b>2:10-2:50 p.m.</b>	On the Present Status and Future Outlook of Astroparticle Physics	F. Halzen (UWisc-Mad/IceCube)
<b>2:50-3:00 p.m.</b>	Closing	H. Davoudiasl (BNL); A. Soni (BNL)
<b>**END OF FORUM**</b>		