



Pushing the Frontiers of Particle Physics During the LHC Run II Era

June 25 - 30, 2017

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Vice Chairs

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The Hong Kong University of Science and Technology

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Conference Description

The Gordon Research Conference on Particle Physics is a unique forum for both senior scientists and the younger generation to present and exchange new data and cutting edge ideas.

The meeting will cover a wide range of topics. A key goal is to bring together scientists working in theory and experiment at all frontiers of particle physics, ranging from the LHC and other future high energy colliders over precision and intensity frontier approaches to the increasingly important study of astroparticles and the early universe at the cosmic frontier. The meeting will provide an excellent opportunity for theorists and experimentalists to communicate with each other, inspire each other and form collaborations in the search for new physics and in the quest to answer long standing questions about the fundamental laws that govern our universe.

Related Meeting



This GRC will be held in conjunction with the "Particle Physics (GRS)" Gordon Research Seminar (GRS). Those interested in attending both meetings must submit an application for the GRS in addition to an application for the GRC. Refer to the [associated GRS program page](#) for more information.

Conference Program

Sunday	
2:00 pm - 8:00 pm	Arrival and Check-in
6:00 pm - 7:00 pm	Dinner
7:30 pm - 7:40 pm	Introductory Comments by GRC Site Staff / Welcome from the GRC Chair
7:40 pm - 9:30 pm	Quantum Chromodynamics at Hadron Collider Discussion Leader: Christian Bauer (Lawrence Berkeley National Laboratory, USA)
7:40 pm - 8:10 pm	Fabrizio Caola (CERN, Switzerland) "Theoretical Standard Model Predictions"
8:10 pm - 8:15 pm	Discussion
8:15 pm - 8:35 pm	Thomas Gehrmann (University of Zurich, Switzerland) "Fixed-Order Predictions for Precision Observables"
8:35 pm - 8:40 pm	Discussion
8:40 pm - 9:00 pm	HuaXing Zhu (Zhejiang University, China) "Resummed Calculations"
9:00 pm - 9:05 pm	Discussion
9:05 pm - 9:25 pm	Simone Alioli (CERN, Switzerland) "Status and Recent Advances in Monte Carlo Event Generation"
9:25 pm - 9:30 pm	Discussion
Monday	
7:30 am - 8:30 am	Breakfast

9:00 am - 12:30 pm	Higgs Physics Discussion Leader: Ian Low (Northwestern University, USA)
9:00 am - 9:30 am	Andre David (CERN, Switzerland) "Experimental Overview on Properties of the 125 GeV Higgs"
9:30 am - 9:35 am	Discussion
9:35 am - 10:00 am	Kirill Melnikov (Karlsruhe Institute of Technology, Germany) "Theoretical Overview on the Production of the 125 GeV Higgs"
10:00 am - 10:05 am	Discussion
10:05 am - 10:30 am	Jure Zupan (University of Cincinnati, USA) "Flavor and the Higgs"
10:30 am - 10:35 am	Discussion
10:35 am - 11:10 am	Group Photo / Coffee Break
11:10 am - 11:40 am	Jean-Baptiste de Vivie (IN2P3, CNRS, France) "Experimental Overview on Searches for Additional Higgs Bosons"
11:40 am - 11:50 am	Discussion
11:50 am - 12:20 pm	John Ellis (King's College London, United Kingdom / CERN, Switzerland) "State of the Higgs Address"
12:20 pm - 12:30 pm	Discussion
12:30 pm - 1:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session
6:00 pm - 7:00 pm	Dinner
7:30 pm - 9:30 pm	The Naturalness Problem Discussion Leader: David Kaplan (Johns Hopkins University, USA)
7:30 pm - 7:45 pm	Martin Schmaltz (Boston University, USA) "Natural Dark Matter/Dark Radiation Candidates"

7:45 pm - 7:50 pm	Discussion
7:50 pm - 8:05 pm	Nemanja Kaloper (University of California, Davis, USA) "Natural Cosmologies"
8:05 pm - 8:10 pm	Discussion
8:10 pm - 8:25 pm	Kiwoon Choi (Institute for Basic Science, South Korea) "Beyond the SM with Naturalness"
8:25 pm - 8:30 pm	Discussion
8:30 pm - 8:45 pm	Hyung Do Kim (Seoul National University, South Korea) "Signs of NNaturalness"
8:45 pm - 8:50 pm	Discussion
8:50 pm - 9:05 pm	James Scargill (University of California, Davis, USA) "Unusual Vacuum Decay Events in the Early Universe"
9:05 pm - 9:10 pm	Discussion
9:10 pm - 9:30 pm	General Discussion

Tuesday

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	Flavor Physics Discussion Leader: Andrzej Buras (Technical University of Munich, Germany)
9:00 am - 9:35 am	Andreas Crivellin (Paul Scherrer Institut, Switzerland) "Flavour Physics in the Light of the Recent Anomalies"
9:35 am - 9:40 am	Discussion
9:40 am - 10:10 am	Karim Trabelsi (High Energy Accelerator Research Organization, Japan) "New Physics from Flavour (Experimental Highlights)"
10:10 am - 10:15 am	Discussion

10:15 am - 10:25 am	Peter Cox (Kavli IPMU, Japan) "Flavoured B-L Local Symmetry and Anomalous Rare B Decays"
10:25 am - 10:30 am	Discussion
10:30 am - 10:55 am	Coffee Break
10:55 am - 11:15 am	Christoph Bobeth (Technical University of Munich, Germany) "Rare Kaon and B Decays in Generic-Z and Vector-Like-Quark Models"
11:15 am - 11:20 am	Discussion
11:20 am - 11:45 am	Svjetlana Fajfer (University of Ljubljana / Jozef Stefan Institute, Slovenia) "Leptoquarks in Flavour Physics"
11:45 am - 11:50 am	Discussion
11:50 am - 12:15 pm	Vincenzo Cirigliano (Los Alamos National Laboratory, USA) "Right-Handed Currents, Epsilon Prime, EDMs"
12:15 pm - 12:20 pm	Discussion
12:20 pm - 12:30 pm	General Discussion
12:30 pm - 1:30 pm	Lunch
2:00 pm - 4:00 pm	Poster Session
4:00 pm - 6:00 pm	Neutrino Physics Discussion Leader: Nakaya Tsuyoshi (Kyoto University, Japan)
4:00 pm - 4:25 pm	Serguey Petcov (International School for Advanced Studies (SISSA) / National Institute for Nuclear Physics (INFN), Italy) "Neutrino Mass, Mixing, the Nature of Massive Neutrinos and Leptonic CP Violation: Current Status and Future Prospects"
4:25 pm - 4:30 pm	Discussion
4:30 pm - 4:50 pm	Masahiro Kuze (Tokyo Institute of Technology, Japan) "Current and Future Neutrino Experiments in Asia"
4:50 pm - 4:55 pm	Discussion

4:55 pm - 5:15 pm	Kam-Biu Luk (University of California, Berkeley, USA) "Current and Future Neutrino Experiments in the U.S."
5:15 pm - 5:20 pm	Discussion
5:20 pm - 5:30 pm	Neus Lopez March (Instituto de Fisica Corpuscular, University of Valencia, Spain) "Neutrino-Less Double Beta Decay Experiments"
5:30 pm - 5:35 pm	Discussion
5:35 pm - 5:45 pm	Kenji Kiuchi (RIKEN, Japan) "Neutrino Mass from CMB Observation [Grand-Bird]"
5:45 pm - 5:50 pm	Discussion
5:50 pm - 6:00 pm	General Discussion
6:00 pm - 7:00 pm	Dinner

Wednesday

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	Physics After LHC Discussion Leader: Michelangelo Mangano (CERN, Switzerland)
9:00 am - 9:05 am	Introduction by Discussion Leader
9:05 am - 9:25 am	Andrea Wulzer (CERN / École Polytechnique Fédérale de Lausanne (EPFL), Switzerland) "The Unique Role of Future High-Energy pp Colliders"
9:25 am - 9:30 am	Discussion
9:30 am - 9:50 am	Tao Han (Tsinghua University, China / University of Pittsburgh, USA) "The Unique Role of Future High-Energy ee Colliders"
9:50 am - 9:55 am	Discussion
9:55 am - 10:20 am	Lyn Evans (CERN, Switzerland) "The Technology Landscape of Future Accelerators"
10:20 am - 10:25 am	Discussion

10:25 am - 10:55 am	Coffee Break
10:55 am - 11:15 am	Lucie Linssen (CERN, Switzerland) "Detectors for Future Collider Experiments"
11:15 am - 11:20 am	Discussion
11:20 am - 11:40 am	David Curtin (University of Maryland, USA) "Searches for Unconventional Signatures at Future Accelerators"
11:40 am - 11:45 am	Discussion
11:45 am - 12:05 pm	Eder Izaguirre (Brookhaven National Laboratory, USA) "Future Experiments to Complement High-E Colliders in the Search and Study of BSM"
12:05 pm - 12:10 pm	Discussion
12:10 pm - 12:30 pm	General Discussion
12:30 pm - 1:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session
6:00 pm - 7:00 pm	Dinner
7:00 pm - 7:30 pm	Business Meeting <i>Nominations for the Next Vice Chair; Fill in Conference Evaluation Forms; Discuss Future Site and Scheduling Preferences; Election of the Next Vice Chair</i>
7:30 pm - 9:30 pm	Baryon Asymmetry Discussion Leader: Pasquale Di Bari (University of Southampton, United Kingdom)
7:30 pm - 7:45 pm	Thomas Konstandin (DESY, Germany) "Electroweak Baryogenesis"
7:45 pm - 7:50 pm	Discussion

7:50 pm - 8:05 pm	Carlos Tamarit (Institute for Particle Physics Phenomenology, Durham University, United Kingdom) "Unifying Inflation with the Axion, Dark Matter, Baryogenesis and the Seesaw Mechanism"
8:05 pm - 8:10 pm	Discussion
8:10 pm - 8:25 pm	Takehiko Asaka (Niigata University, Japan) "Baryogenesis from Right-Handed Neutrino Oscillations"
8:25 pm - 8:30 pm	Discussion
8:30 pm - 8:45 pm	Chee Sheng Fong (University of Sao Paulo, Brazil) "Leptogenesis from Realistic Models"
8:45 pm - 8:50 pm	Discussion
8:50 pm - 9:05 pm	Peihong Gu (Shanghai Jiao Tong University, China) "Models on the Origin of Ordinary and Dark Matter"
9:05 pm - 9:10 pm	Discussion
9:10 pm - 9:30 pm	General Discussion

Thursday

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	Dark Matter Discussion Leader: Jianglai Liu (Shanghai Jiao Tong University, China)
9:00 am - 9:25 am	Patrick Fox (USA) "Particle Theories of Dark Matter"
9:25 am - 9:30 am	Discussion
9:30 am - 9:55 am	Wolfgang Rau (Queen's University, Canada) "Dark Matter Direct Detection Experiment"
9:55 am - 10:00 am	Discussion
10:00 am - 10:35 am	Coffee Break

10:35 am - 11:00 am	Yannis Semertzidis (Center for Axion and Precision Physics Research, Institute for Basic Science, South Korea) "Experimental Searches of Axions"
11:00 am - 11:05 am	Discussion
11:05 am - 11:30 am	Ning Zhou (Shanghai Jiao Tong University, China) "Dark Matter Searches in Colliders"
11:30 am - 11:35 am	Discussion
11:35 am - 11:50 am	Shingo Kazama (University of Zurich, Switzerland) "Recent Results from the XENON1T Experiment"
11:50 am - 11:55 am	Discussion
11:55 am - 12:10 pm	Hai-Bo Yu (University of California, Riverside, USA) "Diversity Problem of Galaxies and Self-Interacting Dark Matter"
12:10 pm - 12:15 pm	Discussion
12:15 pm - 12:30 pm	General Discussion
12:30 pm - 1:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Gravitational Waves and Particle Physics Discussion Leader: Masahiro Takada (Kavli IPMU, Japan)
4:00 pm - 4:25 pm	Tomotake Matsumura (Kavli Institute for the Physics and Mathematics of the Universe (Kavli IPMU) The University of Tokyo, Japan) "Lite (Light) Satellite for the Studies of B-Mode Polarization and Inflation from Cosmic Background Radiation Detection, LiteBIRD"
4:25 pm - 4:30 pm	Discussion
4:30 pm - 4:55 pm	Teruaki Suyama (The University of Tokyo, Japan) "LIGO and Primordial Black Holes"
4:55 pm - 5:00 pm	Discussion

5:00 pm - 5:25 pm	Simeon Bird (Johns Hopkins University, USA) "Did LIGO Detect Dark Matter?"
5:25 pm - 5:30 pm	Discussion
5:30 pm - 5:40 pm	Keisuke Inomata (University of Tokyo, Japan) "Primordial Black Holes in Inflationary Cosmology"
5:40 pm - 5:45 pm	Discussion
5:45 pm - 5:55 pm	Razieh Emami Meibody (Institute for Advanced Study, Hong Kong University of Science and Technology, Hong Kong SAR China) "The Implication of the PBH and UCMHs on Setting a Measurement Limit on the Primordial Power Spectrum"
5:55 pm - 6:00 pm	Discussion
6:00 pm - 7:00 pm	Dinner
Friday	
7:30 am - 8:30 am	Breakfast
9:00 am	Departure

Contributors

		
		