

# Conference on Cosmology Gravitational Waves and Particles (6 to 10 February 2017)

## Day 1 Program: 6 February 2017 (Monday)

### NEC Auditorium

08:00 am - 08:55 am	Registration
09:00 am - 09:10 am	Welcome address: <b>K. Phua (Director, IAS)</b>
09:10 am - 09:30 am	Opening address: <b>H. Fritzsich (University of Munich)</b>
<b>Morning Session I</b>	
<b>Chair: L. Kwek</b>	
09:30 am - 10:15 am	<b>W. Kells</b> <i>LIGO – from Engineering Marvel to Cosmic Explorer</i>
10:15 am - 10:50 am	<b>T. Li</b> <i>Results and Prospects of Ground-Based Gravitational Wave Detectors</i>
10:50 am - 11:20 am	<b>Group Photography &amp; Coffee Break</b>
<b>Morning Session II</b>	
<b>Chair: R. Dumke</b>	
11:20 am - 11:55 am	<b>T. Piran</b> <i>Ligo Discovery and Binary Black Hole Mergers</i>
11:55 am - 12:30 pm	<b>J. Degallaix</b> <i>Advanced Virgo Status</i>
12:30 pm – 01:05 pm	<b>R. Ruffini</b> <i>Gamma Ray Bursts and Binary Driven Hypernovae</i>
01:05 pm - 02:00 pm	<b>Lunch</b>
<b>Afternoon Session I</b>	
<b>Chair: P. Minkowski</b>	
02:00 pm - 02:35 pm	<b>A. Kobakhidze</b> <i>Exploring Fundamental Physics with Gravitational Waves</i>
02:35 pm - 03:10 pm	<b>V. Flambaum</b> <i>Dark Matter and Variations of Fundamental Constants</i>
03:10 pm - 03:45 pm	<b>I. Antoniadis</b> <i>String Cosmology</i>
03:45 pm – 04:15 pm	<b>Coffee Break</b>
<b>Afternoon Session II</b>	
<b>Chair: M. Ducloy</b>	
04:15 pm - 04:50 pm	<b>C. Wetterich</b> <i>Scale Symmetry and Cosmology</i>
04:50 pm - 05:25 pm	<b>R. Volkas</b> <i>Neutrino Mass and Flavor Violation</i>

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05:25 pm - 06:00 pm	<b>S. Zhou</b> <i>Neutrinos and Cosmological Matter-Antimatter Asymmetry</i>
<b>Day 2 Program: 7 February 2017 (Tuesday)</b>	
<b>NEC Auditorium</b>	
<b>Morning Session I</b>	
<b>Chair: C. Wetterich</b>	
09:00 am - 09:45 am	<b>C. Rubbia</b> <i>Neutrinos – Key Elements of Astro-Particle Physics and Cosmology</i>
09:45 am - 10:20 am	<b>Z. Xing</b> <i>Neutrinoless Double Beta Decay - New Insights</i>
10:20 am - 10:55 am	<b>S. Petcov</b> <i>Neutrino Mixing, Leptonic CP-Violation and Neutrino Masses</i>
10:55 am - 11:25 am	<b>Coffee Break</b>
<b>Morning Session II</b>	
<b>Chair: H. Tan</b>	
11:25 am - 12:00 pm	<b>D. Blair</b> <i>New Predictions and New Questions for Gravitational Wave Astronomy</i>
12:00 pm - 12:35 pm	<b>J. Webb</b> <i>Fine Structure Constant Variation in Time, Space or with Gravitational Potential</i>
12:35 pm - 01:10 pm	<b>E. Peik</b> <i>Testing the Equivalence Principle with Atomic Clocks</i>
01:10 pm - 02:00 pm	<b>Lunch</b>
<b>Afternoon Session I</b>	
<b>Chair: J. Sola</b>	
02:00 pm - 02:35 pm	<b>R. Nevezorov</b> <i>Dark Energy Density in SUGRA Models and Degenerate Vacua</i>
02:35 pm - 03:10 pm	<b>P. Minkowski</b> <i>Merging of Black Holes – Gravitational Waves and Strong Gravity</i>
03:10 pm - 03:45 pm	<b>H. Fritzsch</b> <i>Dark Matter and Composite Weak Bosons</i>
03:45 pm - 04:15 pm	<b>Coffee Break</b>
<b>Afternoon Session II</b>	
<b>Chair: P. Sengupta</b>	
04:15 pm - 04:40 pm	<b>A. Bhatti</b> <i>Fermion Masses and Texture Zero</i>
04:40 pm - 05:05pm	<b>V. Saw</b> <i>Mass-Loss due to Gravitational Waves</i>

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05:05pm – 05:30pm	<b>S. Kauffmann</b> <i>Acceleration of Dust-Ball Expansion due to Gravitational Time Dilation</i>
06:30 pm - 08:30 pm	<b>BBQ Dinner at Orchid Room 1 &amp; 2 at Campus Clubhouse (Opposite NEC)</b> (All are welcome)
<b>Day 3 Program: 8 February 2017 (Wednesday)</b>	
<b>NEC Auditorium</b>	
<b>Morning Session I</b>	
<b>Chair: I. Antoniadis</b>	
09:00 am - 09:45 am	<b>G. Smoot</b> <i>Gravitational Waves, Merging Black Holes and Ligo Detections</i>
09:40 am - 10:15 am	<b>Z. Berezhiani</b> <i>The Dark Side of our Universe</i>
10:15 am - 10:50 am	<b>J. Sola</b> <i>Dynamical Cosmic Vacuum against a Rigid Cosmological Constant</i>
10:50 am - 11:20 am	<b>Coffee Break</b>
<b>Morning Session II</b>	
<b>Chair: Z. Xing</b>	
11:20 am – 11:55 am	<b>D. Wen</b> <i>Spatial Distribution of Dark Matter Substructure</i>
11:55 am - 12:30 pm	<b>J. Garriga</b> <i>Black Holes from Cosmic Inflation</i>
12:30 pm – 01:05 pm	<b>J. Martin</b> <i>Cosmic Inflation after Planck</i>
01:05 pm - 02:00 pm	<b>Lunch</b>
02:15 pm - 09:00pm	<b>Excursion</b> <ul style="list-style-type: none"> <li>• Gardens By the Bay</li> <li>• Shopping and Dinner</li> <li>• Return to NEC</li> </ul>

\*Please assemble at NEC Guest Wing Lobby @ Level 1 at 2.15pm for the excursion. Please bring along sunglasses, umbrella and bottled water for the excursion.

# Conference on Cosmology Gravitational Waves and Particles (6 to 10 February 2017)

<b>Day 4 Program: 9 February 2017 (Thursday)</b>	
<b>NEC Auditorium</b>	
<b>Morning Session I</b>	
<b>Chair: Z. Moghaddam</b>	
09:00 am – 09:35 am	<b>M. Putten</b> <i>Galaxy Rotation Curves and Deceleration Parameter</i>
09:35 am - 10:10 am	<b>L. Wen</b> <i>Binary Black Hole Mergers in Triple Systems</i>
10:10 am - 10:45 am	<b>J. Rodriguez</b> <i>Gravitational Wave Emission of Short and Long Gamma Ray Bursts</i>
10:45 am - 11:15 am	<b>Coffee Break</b>
<b>Morning Session II</b>	
<b>Chair: B. Fornal</b>	
11:15 am - 11:50 am	<b>K. Olive</b> <i>Supersymmetric vs <math>SO(10)</math> Models of Dark Matter</i>
11:50 am - 12:25 pm	<b>P. Frampton</b> <i>Black Holes in Dark Galactic Halos</i>
12:25 pm - 01:00 pm	<b>N. Mankoc</b> <i>Fermions and Bosons in the Expanding Universe</i>
01:00 pm - 02:00 pm	<b>Lunch</b>
<b>Afternoon Session I</b>	
<b>Chair: S. Kabana</b>	
02:00 pm - 02:35 pm	<b>Y. Ha</b> <i>Weighing the Black Hole via Quasi-Local Energy</i>
02:35 pm - 03:10 pm	<b>G. Ahuja</b> <i>Texture Zero Mass Matrices and CP-Violation</i>
03:10 pm - 03:45 pm	<b>M. Gupta</b> <i>CP-Violating Invariants in Flavor Physics</i>
03:45 pm - 04:15 pm	<b>Coffee Break</b>
<b>Afternoon Session II</b>	
<b>Chair: S. Petcov</b>	
04:15 pm - 04:50 pm	<b>K. Shima</b> <i>Nonlinear SUSY General Relativity</i>
04:50 pm - 05:15 pm	<b>L. Qixiang</b>

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	<i>Charged Particle Multiplicity Distributions at 13 TeV at the LHC</i>
05:15 pm – 05:40 pm	<b>W. Yang</b> <i>Fluctuations in Particle Production and Multiplicity Distributions</i>
07:00 pm - 10:00 pm	<b>Dinner Banquet</b> <b>(By Invitation only)</b>

\*Please assemble at NEC Guest Wing Lobby @ Level 1 at 6.00pm for the Dinner Banquet at Chui Huay Lim Club (190 Keng Lee Road) Level 2 Ballroom

<b>Day 5 Program: 10 February 2017 (Friday)</b>	
<b>NEC Auditorium</b>	
<b>Morning Session I</b>	
<b>Chair: A. De Roeck</b>	
09:00 am – 09:35 am	<b>K. Danzmann</b> <i>Gravitational Wave Astronomy from Space</i>
09:35 am - 10:10 am	<b>P. Premadi</b> <i>Lensing of Gravitational Waves</i>
10:10 am - 10:45 am	<b>B. Fornal</b> <i>Dark Matter and Baryogenesis from Nonabelian Gauged Lepton Number</i>
10:45 am - 11:15 am	<b>Coffee Break</b>
<b>Morning Session II</b>	
<b>Chair: T. Goldman</b>	
11:15 am - 11:50 am	<b>S. Kabana</b> <i>Ultrarelativistic Heavy Ion Physics at RHIC and LHC</i>
11:50 am - 12:25 pm	<b>V. Khoze</b> <i>The LHC as a Photon-Photon-Collider</i>
12:25 pm – 01:00 pm	<b>J. Gao</b> <i>Single Top Production and Decay: QCD and LHC</i>
01:00 pm - 02:00 pm	<b>Lunch</b>
<b>Afternoon Session I</b>	
<b>Chair: V. Flambaum</b>	
02:00 pm - 02:35 pm	<b>B. Robson</b> <i>The Matter-Antimatter Problem in our Universe</i>
02:35 pm - 03:10 pm	<b>T. Goldman</b> <i>Higgs Universality and Physics Beyond the Standard Model</i>
03:10 pm - 03:45 pm	<b>J. Gunion</b>

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	<i>Future of Higgs Physics</i>
03:45 pm - 04:15 pm	<b>Coffee Break</b>
04:15 pm - 04:50 pm	<b>A. De Roeck</b> <i>Searches for New Physics at the LHC</i>
04:50pm – 05:10 pm	<b>H. Fritzsch</b> <i>Closing Remark</i>