

# 2017 PACIFIC COAST GRAVITY MEETING

## UC SANTA BARBARA

PART I (Friday 8:50 AM - 10:25 AM)

Chair: Gary Horowitz

**Gary Horowitz (UC Santa Barbara). Opening Remarks**

Steve Giddings (UC Santa Barbara)

*Black hole unitarization via small couplings: Postulates to soft quantum structure*

Alex Kinsella (UC Santa Barbara)

*Diffeomorphism-invariant bulk observables in AdS*

Samuel Loomis (UC Davis)

*Dynamical suppression of non-geometric causal sets*

Zicao Fu (UC Santa Barbara)

*Testing the quantum null energy condition in curved space*

Brianna Grado-White (UC Santa Barbara)

*Holographic screens in the context of gauge/gravity*

Isabel Garcia Garcia (Oxford & KITP)

*The string soundscape at gravitational wave detectors*

Jung-Tsung Li (UC San Diego)

*Gravitational waves with memory from core-collapsing supermassive stars*

**35 Minute Coffee Break**

PART II (Friday 11 AM - 12:25 PM)

Chair: Leo Stein

Hiroki Nagakura (Caltech)

*Towards 7-dimensional neutrino-radiation-hydrodynamic simulations in full general relativity*

Torrey Cullen (CSU Fullerton)

*Tidal effects in binary neutron star systems for all masses*

Vijay Varma (Caltech)

*Gauge conditions in binary black hole initial data*

Francois Hebert (Caltech)

*General-relativistic neutron star evolutions with the discontinuous Galerkin method*

Maria Okounkova (Caltech)

*Binary black hole mergers in numerical dynamical Chern-Simons gravity*

Jonathan Blackman (Caltech)

*Surrogate models of gravitational waves from numerical relativity simulations of binary black hole mergers*

**1.5 Hour Lunch Break****PART III (Friday 2:00 PM - 3:25 PM)**

Chair: Achilleas Porfyriadis

Max Rota (UC Santa Barbara)

*Comments on the holographic entropy cone*

Jason Wien (UC Santa Barbara)

*Handlebody phases and the holographic entropy cone*

ChunJun Cao (Caltech)

*Space from Hilbert space: Recovering geometry from entanglement*

Cesar Agon (Brandeis University &amp; KITP)

*Divergences in open quantum systems*

Eric Mefford (UC Santa Barbara)

*Boundary black holes and jammed CFTs*

Alexandra Miller (UC Santa Barbara)

*Superposition induced topology changes in quantum gravity*

Luciano Manfredi Console (Loyola Marymount University)

*Horizon quantum mechanics of sub-planckian black holes***35 Minute Coffee Break****PART IV (Friday 4:00 PM - 5:15 PM)**

Chair: Max Rota

Achilleas Porfyriadis (UC Santa Barbara)

*Kerr/CFT*

Oscar Varela (Utah State University &amp; Max Planck Institute (Albert Einstein Institute))

*Logarithmic corrections to black hole entropy from Kerr/CFT*

Leo Stein (Caltech)

*Extremal Black Holes in Dynamical Chern-Simons Gravity*

Baoyi Chen (Caltech)

*Linear metric perturbations in near-horizon extremal Kerr*

Peter Zimmerman (University of Arizona)

*Amplified perturbations of nearly extremal black holes*

Anna Heffernan (University of Florida)

*Gravitational waves from compact binaries in scalar-tensor gravity to second post-newtonian order*

**PART V (Saturday 8:50 AM - 10:25 AM)**

Chair: Steven Carlip

Belinda Pang (Caltech).

*Action formalism for deriving interactions in LIGO: relation to its measurement sensitivity and other insights*

Maximiliano Isi (Caltech)

*Polarizations of continuous gravitational waves in the advanced detector era*

Lamar Glover (Cal State LA)

*Study of optical scatterers within coating layers of LIGO test-mass mirrors*

Ian Guerrero (Humboldt State University)

*Torsion pendulum measurements of gravity at the 20 micron distance scale.*

Brittany Kamai (Caltech)

*Results from the Fermilab Holometer - MHz gravitational wave search*

Matthew Giesler (Caltech)

*The population of low-mass X-ray binaries ejected from black-hole retaining globular clusters*

John Derby (CSU Fullerton)

*Testing the spin limit for merging black holes***35 Minute Coffee Break****PART VI (Saturday 11:00 AM - 12:25 PM)**

Chair: Andrew Waldron

Chris Akers (UC Berkeley)

*Geometric constraints from subregion duality beyond the classical regime*

Arvin Shahbazi Moghaddam (UC Berkeley)

*Local modular hamiltonians from the quantum null energy condition*

Adam Levine (UC Berkeley)

*Saturation of the quantum null energy condition at leading order in  $1/N$* 

Gabriel Trevino Verastegui (UC Santa Barbara)

*Obtaining information about the bulk metric in spacetimes with caustics using light cone cuts*

Nico Salzetta (UC Berkeley)

*A toy model for holography beyond AdS/CFT*

Fabio Sanches (UC Berkeley)

*Bulk locality from subregion duality: Part 1*

Sean J. Weinberg (UC Santa Barbara)

*Bulk locality from subregion duality: Part 2*

**1.5 Hour Lunch Break****PART VII (Saturday 2:00 PM - 3:25 PM)**

Chair: Sean Weinberg

Douglas Singleton (CSU Fresno)

*Matter-antimatter asymmetry via a running vacuum coupling*

Nader Inan (UC Merced)

*Interaction of gravitational waves and superconductors*

Rui Xu (IU Bloomington)

*Constraining nonmetricity using effective field theory*

Shouhong Wang (IU Bloomington)

*Law of gravity, dark matter and dark energy*

Mudassir Moosa (UC Berkeley)

*Geometry of the holographic screens*

Aidan Chatwin-Davies (Caltech)

*Cosmology as thermalization: A cosmic no-hair theorem from the generalized second law*

Patrick McDougall (CSU Fresno)

*Particle production in a gravitational wave background***35 Minute Coffee Break****PART VIII (Saturday 4:00 PM - 5:25 PM)**

Chair: Beverly Berger

Lee Lindblom (UC San Diego)

*Constructing reference metrics for three dimensional manifolds*

Maria Rodriguez (Utah State University &amp; Max Planck Institute (Albert Einstein Institute))

*Blandford-Znajek without plasma*

Davide Gerosa (Caltech)

*The curious and simple limit of equal-mass precessing black-hole binaries*

Andrew Waldron (UC Davis)

*Singular volume problems*

Christine Moran (Caltech)

*Supermassive stars*

Aurelien Hees (UCLA)

*Tests of the gravitation theory using short-period stars around the supermassive black hole in our galactic center*

Steven Carlip (UC Davis)

*Black hole entropy from horizon BMS symmetry*