

# 9th PACIFIC COAST GRAVITY MEETING

*March 5-6 1993, UC Santa Barbara*

All talks are 15 minutes each, with a couple of minutes for discussion. Please note that the schedule is very tight, and the all-important cookie breaks are already brief. Talks have been only loosely categorized, and poor choices of category reflect only the organizers ignorance. The order within each category is unimportant, so if necessary speakers can make changes within a category by mutual agreement. Since the final schedule will be posted outside the conference room, please let us know of any changes. A few copies of the submitted abstracts will be placed on display outside the conference room at the time of the meeting. Abstracts can also be requested from us via e-mail.

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## REVISED SCHEDULE

*C/M* = Cosmology/Minisuperspaces

*For* = Formalism

*BHs* = Black Holes

*Exp* = Experimental

*S/A* = Strings/Alternative theories

*Q/G* = Quantum Field Theory/Quantum Gravity

*Fnd* = Foundational aspects

*Mth* = Mathematical Relativity

**Session I: Friday, 9:00AM-10:40AM**

*Chairperson:* Gary Horowitz

- C/M* 9:00 B. Berger (Oakland U. and ITP, UCSB): *Numerical study of the 2-polarization Gowdy  $T^3$  cosmology*
- C/M* 9:20 P. Morse (UCSB): *Massive scalar fields in simplicial minisuperspace models*
- C/M* 9:40 T. Jacobson (U. Maryland and ITP, UCSB): *How small can the Universe be?*
- C/M* 10:00 D. Kastor (U. Massachusetts): *Cosmological multi black hole solutions*
- C/M* 10:20 Y. Peleg (Brandeis U.): *Wavefunction of a collapsing star and mass quantization*

**Doughnut Break: 10:40AM-11:00AM**

**Session II: Friday, 11:00AM-12:40PM**

*Chairperson:* Beverly Berger

- For* 11:00 J. Winicour (U. Pittsburgh): *The boundary layer at scri*
- For* 11:20 C. Gundlach (U. Utah): *i) Asymptotics of gravitational collapse of a scalar field; ii) Short-wave expansion in quantum cosmology*
- For* 11:40 C. G. Torre (Utah State U.): *Symmetries of the Einstein Equations*
- For* 12:00 Karl Yee (UC Irvine): *Equations of motion of test particles in external fields*
- For* 12:20 J. Traschen (U. Massachusetts): *Generalized first law for black holes and non-vacuum linearization instability*

**Lunch: 12:40PM-2:00PM**

**Session III: Friday, 2:00PM-3:55PM**

*Chairperson:* John Friedman

- BHs* 2:00 J. D. Bekenstein (Hebrew U. and UCSB): *How fast does information leak out from a black hole*
- BHs* 2:20 T. M. Helliwell (Harvey Mudd College): *Testing a stability conjecture for Cauchy horizons*
- Exp* 2:40 J. Weber (UC Irvine): *Gravitational radiation detector observations*
- Exp* 3:00 R. T. Stebbins (JILA): *Current conceptual design for a gravitational radiation antenna in space*
- Exp* 3:20 D. Hils (JILA): *Estimated number of highly relativistic binaries containing a compact star orbiting a massive black hole*
- BHs* 3:40 A. Theocharis (Caltech and ITP, UCSB): *Stability of circular orbits around a black hole under radiation reaction (15 min.)*

**Cookie Break: 3:55PM-4:15PM**

**Session IV: Friday, 4:15PM-5:40PM**

*Chairperson:* Kip Thorne

- Exp* 4:15 R. Spero (Caltech): *An overview of the plans and prospects for the LIGO project*
- Exp* 4:35 C. Cutler (Caltech): *"The last 3 minutes"*
- Exp* 4:55 E. Poisson (Caltech): *Modeling gravitational-wave emissions from coalescing compact binaries (15 min.)*
- Exp* 5:10 D. Kennefick (Caltech): *Detection of the Christodoulou memory (15 min.)*
- Exp* 5:25 D. Marković (Caltech): *Determination of cosmological parameters from measurements of gravitational waves emitted by coalescing, compact binaries (15 min.)*

**Session V: Saturday, 9:00AM-10:40AM**

*Chairperson:* Ted Jacobson

- S/A* 9:00 D. Welch (UCSB): *Exact three dimensional black holes in string theory*
- S/A* 9:20 R. Laflamme (Los Alamos): *Black strings and P-branes are classically unstable*
- S/A* 9:40 R. Zalaletdinov (Uzbek Acad Sci): *Macroscopic gravity*
- S/A* 10:00 R. Hammond: *Propagating torsion and spin*
- S/A* 10:20 J. Wheeler (Utah State): *Matter couplings in higher dimensional gravity*

**Doughnut Break: 10:40AM-11:00AM**

**Session VI: Saturday, 11:00AM-12:40PM**

*Chairperson:* Jim Hartle

- S/A* 11:00 T. Dray (Oregon State): *Wave equation in the presence of signature change*
- Q/G* 11:20 E. Flanagan (Caltech): *By how much can local energy conditions be violated?*
- Q/G* 11:40 John Baez (UC Riverside): *Quantum gravity and the algebra of tangles*
- Q/G* 12:00 R. S. Tate (UCSB): *Lessons from quantized minisuperspaces*
- Q/G* 12:20 K. Schleich (U British Columbia): *What can the Ising model teach us about the measure for quantum gravity?*

**Lunch: 12:40PM-2:00PM**

**Session VII: Saturday, 2:00PM-3:40PM**

Chairperson: Jim Isenberg

Thank organizers: Ranjeet Vaid  
Alvin Kuntzev  
Gary Horowitz  
Su-Hae

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of Rip's House CB

- Fnd* 2:00 A. Anderson (Imperial College): *The frozen formalism: the difference between observables and what we observe*
- Fnd* 2:20 J. B. Hartle (UCSB): *Generalized quantum mechanics of a relativistic world line*
- Fnd* 2:40 D. Craig (UCSB): *Will radiation tell us whether our universe has time symmetric boundary conditions?*
- Fnd* 3:00 H-J. Pohle (UCSB): *Complex numbers, quantum mechanics and the beginning of time*
- BHs* 3:20 Rob Meyers (McGill U and ITP, UCSB): *Black Hole Entropy for Lovelock Gravity*

**Cookie Break: 3:40PM-4:00PM**

**Session IIX: Saturday, 4:00PM-5:40PM**

Chairperson: Vince Moncrief

- Mth* 4:00 J. Friedman (U Wisconsin and ITP, UCSB): *Topological censorship*
- Mth* 4:20 C. A. Manogue (Oregon State): *Lorentz transformations and division algebras*
- Mth* 4:40 T. Koikawa (Otsuma University and UC Irvine): *Infinite series of solutions to the static Einstein-scalar field equation*
- Mth* 5:00 S. Boersma (Oregon State): *Slicing, threading and parametric manifolds*
- Mth* 5:20 Don Witt (U British Columbia): *There is more to spacetime than geometry and topology*