The MONTE CARLO METHOD in the Physical Sciences
Celebrating the 50th Anniversary of the Metropolis Algorithm

June 9-11, 2003
J. Robert Oppenheimer Study Center

AGENDA

Sunday, June 8	
6:00-8:00pm	**RECEPTION/REGISTRATION**, Hilltop House (Best Western) Motel, Tyuonyi Room

Monday, June 9	
	WELCOMING
8:15	Dr. George "Pete" Nanos, Director, Los Alamos National Laboratory
	SESSION A, The Metropolis Algorithm And The Monte Carlo Method
	Rooms 216 And 218 (Cochiti And Jemez), Chair: K. Binder
8:30	D. Landau (Georgia), *The Metropolis Monte Carlo Method in Statistical Physics*
9:15	D. Ceperley (Illinois), *Metropolis Methods for Quantum Monte Carlo Simulations*
10:00	Break
10:30	R. Gupta (LANL*), Simulating a Fundamental Theory of Nature*
11:15	B. Berne (Columbia), *To be announced*
12:00	**LUNCH**
	SESSION B, The Metropolis Algorithm and the Monte Carlo Method: a timeline
	Rooms 216 And 218 (Cochiti And Jemez), Chair: D. Ceperley
1:15	J. Gubernatis (LANL), *The Heritage*
1:45	M. Rosenbluth (Irvine), *Genesis of the Monte Carlo Algorithm for Statistical Mechanics*
2:15	W. Wood (LANL), *A Brief History of the Use of the Metropolis Method at LANL in the 1950s*
2:45	Break
3:15	M. Kalos (Livermore), *Early Development of Quantum Monte Carlo*
3:45	R. Swendsen (Carnegie-Mellon), *The Development of Cluster and Histogram Methods*
4:15	M. Creutz (Brookhaven), *Early Days of Lattice Gauge Theory*

Tuesday, June 10	
	SESSION C, Stepping Beyond the Metropolis Algorithm
	Rooms 216 And 218 (Cochiti And Jemez), Chair: D. Landau
8:30	K. Binder (Mainz), *Overcoming the Limitation of Finite Size in Simulations: from the phase transition of the Ising model to polymers, spin glasses, etc.*
9:15	M. Troyer (ETH), *Non-Local Updates for Quantum Monte Carlo Simulations*
10:00	Break
10:30	D. Frenkel (FOM Amolf), *Biased Sampling Schemes*
11:15	B. Berg (Florida State), *Rugged Monte Carlo: a biased sampling method for peptides*
12:00	**LUNCH**

Tuesday, June 10	
	SESSION D, Classical Algorithms I
	Room 216 (Cochiti), Chair: M. Novotny
1:15	J. de Pablo (Wisconsin), *Density of States Based Monte Carlo Techniques for Simulation of Proteins, Liquid Crystals, and Polymers*
1:45	H. Scheraga (Cornell), *Adaptations of Monte Carlo or the Global Optimization in Treating Fluids and Structures of Peptides and Proteins*
2:15	N. Wilding, (Bath), *Monte Carlo Phase Switching*

Tuesday, June 10	
	SESSION E, Quantum Algorithms I
	Room 218 (Jemez), Chair: M. Imada
1:15	N. Kawashima (Tokyo Metropolitan), *Large Spin, High-Order Interaction, and Bosonic Problems*
1:45	A. Sandvik (Abo Akademi), *Directed Loop Algorithm*
2:15	V. Panharipande (Illinois), *Quantum Monte Carlo of Nuclei and Nuclear Reactions*

Tuesday, June 10	
3:00-4:30	**POSTER SESSION, Otowi Cafeteria, Side Rooms A, B, and C**

Tuesday, June 10	
6:30-8:30	**BANQUET, La Terraza Room, La Fonda Hotel, Santa Fe** Speaker: C. Bennet (IBM-Yorktown)

Wednesday, June 11	
	SESSION F, Stepping Beyond the Physical Sciences
	Rooms 216 And 218 (Cochiti And Jemez), Chair: D. Frenkel
8:30	J. Liu (Harvard), *Statistical Analysis of Single Molecule Experimental Data*
9:15	E. Domany (Weizmann), *Cluster Analysis of DNA Chip Data*
10:00	Break
10:30	A. Chhabra (Merrill Lynch), *Random and Not So Random Walks in Finance*
11:15	D. Stauffer (Köln), *How to Convince Others: Monte Carlo simulations of the Sznajd model*
12:00	**LUNCH**

Wednesday, June 11	
	SESSION G, Classical Methods II
	Room 216 (Cochiti), Chair: H. Gould
1:15	A. Panagiotopoulos (Princeton), *New Simulation Approaches for Modeling Phase Transitions in Ionic and Colloid/Polymer Solutions*
1:45	J. Machta (Massachusetts), *What is the Best Way to Simulate an Equilibrium Classical Spin Model?*
2:15	J.-S. Wang (Singapore), *Transition Matrix Monte Carlo and Flat-Histogram Algorithms*
2:45	Break
	SESSION H, Classical Methods III
	Room 216 (Cochiti), Chair: N. Kawashima
3:15	Y. Okabe (Tokyo Metropolitan), *Generalized Probability Changing Cluster Algorithm and Other New Monte Carlo Algorithms*
3:45	E.Luijten (Illinois), *Cluster Algorithms: beyond suppression of critical slowing down*
4:15	K. Hukushima (Tokyo), *Population Annealing and Its Application to a Spin Glass*

Wednesday, June 11	
	SESSION I, Landscapes and Dynamics
	Room 218 (Jemez), Chair: J. Tobochnik
1:15	Y. Okamoto (IMS), *Metropolis Algorithm in Generalized Ensemble*
1:45	J. Straub (Boston U), *Generalized Parallel Sampling*
2:15	D. Wales (Cambridge), *Exploring Energy Landscapes with Monte Carlo Methods*
2:45	Break
	SESSION J, Landscapes and Dynamics
	Room 218 (Jemez), Chair: M. Troyer
3:15	M. Novotny (Mississippi State), *Algorithms for Faster and Larger Dynamic Monte Carlo*
3:45	C. Dellago (Vienna), *Monte Carlo Coupling in Path Space: calculating time correlation functions by transforming ensembles of trajectories*
4:15	P. Grassberger (Jülich), *To be announced*

Wednesday, June 11	
	SESSION K, Quantum Methods II
	Room 240 (San Ildefonso), Chair: J. Gubernatis
1:15	M. Imada (ISSP), *Path-Integral Renormalization Group*
1:45	S. Sorella (SISSA), *Effective Hamiltonian Approach for Strongly Correlated Electrons*
2:15	J. Carlson (LANL), *Superfluid Fermi Gases and Neuron Matter*
2:45	Break
	SESSION L, Dynamics: Quantum
	Room 218 (San Ildefonso), Chair: M. Creutz
3:15	J. Doll (Brown), *Dynamical Path Integral Methods*
3:45	E. Rabini (Tel Aviv), *Quantum Mode Coupling and Path Integral Monte Carlo*
4:15	H. Grabert (Freiburg), *Monte Carlo Methods for Dissipative Quantum Systems*