

39th Rencontres de Moriond
 “Quantum information and Decoherence in Nanosystems”
 LaThuile, Italy, 25th January-1st February 2004

Scientific Program

	“Quantum information and Decoherence in Nanosystems” LaThuile 25 th January-1 st February 2004		
	Time allocated for talks includes 10 mn of questions for long talks and 5 mn of questions for short talks		
Sunday 25 th	15h-20h arrival-registration-welcome party		
Monday 26 th .	C=Quantum Noise Measurements, Full Counting Statistics, Quantum Detection		
8h25-8h35			Introduction
8h35-9h25	C1	B. Reulet	Environmental effects in the third moment of voltage fluctuations in a tunnel junction
9h25-10h15	C2	Y. Nazarov	Quantum Noise: Challenge and Prospect.
10h15-10h40		coffee break	
10h40-11h30	C3	P. Samuelsson	Two-particle Aharonov-Bohm effect and Entanglement in the electronic Hanbury Brown Twiss set-up
11h30-11h55	C4	R. Deblock	Detection of Quantum noise from an electrically-driven two-level system.
11h55-12h20	C5	K. Nagaev	Frequency scales for current statistics of mesoscopic conductors
16h30-17h20	C6	W. Belzig	Shot Noise in Diffusive Normal Metal-Superconductor-Heterostructures
17h20-17h45	C7	P. Roche	Quantum partition noise of photon-created electron-hole pairs
17h45-18h10	C8	F. Pistolesi	Current-current correlations in hybrid superconducting and normal metal multiterminal structures
18h10-18h35	C9	F. Lefloch	Mesoscopic transition in the shot noise of diffusive SNS junctions
18h35-19h00		coffee break	
19h00-19h25	C10	G. Burkard	Lower bounds on electron spin entanglement from beamsplitter current correlations
19h25-19h50	C11	U. Gavish	Heisenberg constrains on mesoscopic and molecular amplifiers
19h50-20h15	C12	B. Placais	A GHz HBT experiment to probe the statistics of photons emitted by quantum conductors
21h-22h30		POSTER 1	C14-C15-C16-C17-C18-C19-C20-C21-C22-C23
Tuesday 27 th	Correlated systems : $G=$ FQHE, zero resistance states. $F=$ “0.7 plateau” in QPCs, Luttinger liquids.		
8h30-9h20	G1	F. Beltram	Quasiparticle tunneling between fractional quantum Hall edges
9h20-9h45	G2	B. Trauzettel	On the determination of fractional charge through shot noise measurements
9h45-10h10	G3	T.Martin	photo assisted current and shot noise in the FQHE
10h10-10h40		coffee break	
10h40-11h05	C13	E. Sukhorukov	Statistics of fluctuations in Networks:Stochastic Path Integral Approach.
11h05-11h55	G4	R. Du	Microwave-Induced Vanishing Resistance States in a 2D Electron Gas
11h55-12h20	G5	A. D. Mirlin	Theory of the oscillatory photoconductivity of a 2D electron gas
16h30-16h55	H1	J. Nicholls	Evidence for Many Body Behaviour at $G=0.7 2e^2/h$
16h55-17h45	H2	Y. Meir	The 0.7 anomaly: The puzzle and its resolution
17h45-18h35		coffee break	
18h35-19h00	H3	A. Bachtold	Evidence for a Luttinger liquid behavior in crossed meatallic single-wall nanotubes
19h00-19h25	H4	N. Kang	Coulomb interaction and disorder effects in multiwall nanotubes
19h25-19h50	H5	F. Dolcini	Oscillatory nonlinear conductance of a Luttinger liquid with an impurity
19h50-20h15	H6	I. Safi	A one-channel conductor in an ohmic environment:mapping to a TTL
Wednesday 28 th	B= Quantum Entanglement and Information Processing with Mesoscopic Systems		
8h30-9h20	B1	D. Averin	Quantum Non-Demolition measurements
9h20-10h10	B2	E. Collin	Quantum Coherence in the Quantronium Charge-Phase Qubit Circuit
10h10-10h40		coffee break	
10h40-11h30	B3	R. Fazio	Josephson arrays as quantum channels
11h30-11h55	B4	J. Ankerhold	macroscopic tunneling of quantum bits
11h55-12h20	B5	E. Buks	Superconducting stripline resonator for coupling Josephson

			Qubits
16h30-17h30	B6	R. Hanson	Single-shot read-out of a spin qubit
17h30-18h20	B7	S. Tsai	Josephson CNOT quantum logic gate
18h20-18h45	B8	M. Sillanpaa	Radio frequency charge detection with inductive-SET (L-SET)
18h45-19h10		coffee break	
19h10-19h35	B9	J. Vidal	Entanglement and spin squeezing in a quantum phase transition
19h35-20h00	B10	D. Feinberg	Spin current shot noise as probe of interactions and entanglement in mesoscopic systems
21h-22h30		POSTER 2	B20-B21-B22-B23-B24-B25-B26-B27
Thursday 29 th .	B= Quantum Entanglement and Information Processing with Mesoscopic Systems E= Hybrid Systems :Normal Metal-superconductor, Ferromagnetic Metal-superconductor A= Quantum Coherence and Decoherence Scheme in Nanosystems		
8h30-9h20	B11	H. Takayanagi	Superconducting Flux Qubit as a Macroscopic Artificial Atom
9h20-9h45	B12	G. Blatter	Decoherence in superconducting qubits by phonon radiation and tetrahedral qubits
9h45-10h10	B13	K. Frahm	Universal regime of fidelity decay in realistic quantum computations
10h10-10h40		coffee break	
10H40-11H05	E1	A. Bauer	Spontaneous current in a superconducting loop with a ferromagnetic pi-junction
11H05-11H30	E2	W. Escoffier	STM spectroscopy and transport in granular superconducting films
11H30-11H55	E3	H. Courtois	anomalous DOS in metallic film in proximity with a superconductor
11H55-12H20	E4	J. Y. T. Wei	Current-Driven Dephasing of d-wave Superconductivity
16h30-17h20	A1	M. V. Feigelman	Dephasing in disordered metals with superconductive grains
17h20-17h45	A2	J. Imry	Decoherence in mesoscopic systems
17h45-18h35	A3	I. Neder	An electronic Mach*Zehnder interferometer
18h35-19h00		coffee break	
19h00-19h25	A4	F. Sols	Electronic lifetimes in ballistic quantum dots electrostatically coupled to metallic environments
19h25-19h50	A5	Ph. Jacquod	What is left of quantum coherence in the deep classical limit?
19h50-20h15	A6	G. Montambaux	Non-exponential energy and phase relaxations in low dimensional disordered conductors
21h-22h30		POSTER 3	A11-A12-A14-A15-E7-E8-E9-E10-E11-E12-E13
Friday 30 th .	F= Spin dependent transport I= Correlated systems : Quantum Dots, wires and 2DEG E= Hybrid Systems :Normal Metal-superconductor, Ferromagnetic Metal-superconductor		
8h30-9h20	F1	K. Enslin	Phase coherence in ring structures
9h20-10h10	F2	V. Falko	Spin-orbit coupling and quantum transport in semiconductor dots and wires
10h10-10h35	F3	A. Khaetskii	Spin relaxation and decoherence in quantum dots
10h35-11h05		coffee break	
11h05-11h55	F4	D. Ralph	spins in metallic grains
11h55-12h20	F5	D. A. Gorokhov	Fluctuations of g-Factors in Metal Nanoparticles: Effects of Electron-Electron interaction and spin-orbit scattering
16h30-17h20	F6	M. Zaffalon	spin injection and spin transport in mesoscopic ferromagnet/metal and ferromagnet/superconductor structures
17h20-17h45	F7	J. Schliemann	Non-ballistic spin field-effect transistor, anisotropic charge conductivity and spin-Hall effect
17h45-18h10	I1	V.E. Kravtsov	Dynamic localization in quantum dots
18h10-18h35	I2	M.Yamaguchi	Conductance oscillations of a quantum wire with a side-coupled quantum dot
18h35-19h00		coffee break	
19h00-19h25	E5	Y. Avishai	Quantum dot in the Kondo regime coupled to unconventional superconductors
19h25-19h50	E6	V. M. Yakovenko	Andreev bound states in superconductors: Spontaneous soliton formation and fractional Josephson effect.
19h50-20h15	I3	J-L Pichard	Residual conductance of correlated one dimensional nanosystems
21h-22h30		POSTER 4	F8-F9-F10-F11-G6-G7-H7-H8
Saturday 31 th .	D= Quantum Transport in Molecular and Atomic Scale Systems B= Quantum Entanglement and Information Processing with Mesoscopic Systems E= Hybrid Systems :Normal Metal-superconductor, Ferromagnetic Metal-superconductor		
8h30-9h20	D1	M. Buitelaar	A carbon nanotube quantum dot coupled to superconductors
9h20-9h45	D2	S. Kubatkin	Single organic molecule SET
9h45-10h10	D3	J. van Ruitenbeek	Electrical conductance through a single hydrogen molecule

10h10-10h40		coffee break	
10h40-11h05	D4	M. R. Wegewijs	Electron tunnelling through polynuclear transition metal complexes
11h05-11h30	D5	C. Urbina	Josephson effects in superconducting atomic contacts
11h30-12h20	D6	JC Cuevas	Multiple Andreev Reflections and Superconducting Atomic Contacts
16h30-17h20	B14	J. Claudon	Coherent oscillations in a current-biased dc SQUID
17h20-17h45	B15	L. Y. Gorelik	Resonant microwave properties of voltage biased single Cooper pair transistor
17h45-18h10	B16	T. Hayashi	Coherent charge oscillation and decoherence in a semiconductor double quantum dot
18h10-18h35	B17	S. W. Kim	Quantum electron pumps beyond adiabatic regime
18h35-19h00	B18	A.O. Niskanen	First measurements of the Cooper pair sluice
19h00-19h25		coffee break	
19h25-19h50	B19	J. Delahaye	Bloch oscillating transistor and Coulomb blockade of Cooper pairs
19h50-20h15	E7	A. M. Savin	Cold electron transistor
21h-22h30		POSTER 5	D7-D8-D9-D10-D11-D12
Sunday 1 st	I= Correlated systems : Quantum Dots, wires and 2DEG A= Quantum Coherence and Decoherence Scheme in Nanosystems		
8h30-8h55	I4	A. D. Zaikin	Electron transport through interacting quantum dots and diffusive metallic wires
8h55-9h20	A7	R. Mohanty	Experimental test for electron decoherence by an arbitrarily small number of magnetic impurities.
9h20-9h55	A8	S. Kettmann	Distribution of the Kondo temperature in mesoscopic disordered metals
9h55-10h20	A9	C. Bauerle	Electron coherence in mesoscopic Kondo wires
10h20-10h55	A10	A. Savchenko	Interactions in high mobility two-dimensional systems
11h30		Lunch	
		Departure	