

THE PHYSICS OF NON-HERMITIAN OPERATORS

Program and Schedule of Talks 22 - 25 November, 2005

All talks will be given in the Jannasch Hall, Music Conservatoire, Stellenbosch University

Tuesday 22 November 2005

EVENT	TIME	VENUE
Pre-registration and Welcome Function	18:00 - 19:30	Botanical Garden, Stellenbosch University (next to Harmonie student residence where participants stay)
	±19:30	Brief visit to Music Conservatoire and Workshop Venue
EVENING DINNER		Participants' own arrangements

Wednesday 23 November 2005

Registration	07:30 - 08:15	Music Conservatoire Foyer (Registration for participants who have not registered on Tuesday)	
Opening	08:15 - 08:30	Jannasch Hall, Music Conservatoire	
EVENT	TIME	SPEAKER	TITLE
Plenary Session 1 Chair: Miloslav Znojil	08:30 - 09:20	Michael Berry	The optical singularities of bianisotropic crystals
	09:30 - 10:00	Alexei Mailybaev	Berry phase around EP and DP degeneracies of non-Hermitian Hamiltonians
COFFEE BREAK	10:10 - 10:30		
Plenary Session 2 Chair: Miloslav Znojil	10:30 - 11:00	Hugh Jones	Equivalent Hamiltonians for \mathcal{PT} -symmetric versions of dual 2-dimensional field theories
	11:10 - 11:40	Stefan Weigert	Detecting "Broken" \mathcal{PT} -Symmetry
	11:50 - 12:40	Alfonso Mondragón	Crossings and anti-crossings of energies and widths, changes of identity and geometric phases of unbound states
LUNCH BREAK	12:50 - 14:30		
Plenary Session 3 Chair: Hendrik Geyer	14:30 - 15:20	Carl Bender	Some new results on \mathcal{PT} -symmetric classical and quantum mechanics
	15:30 - 16:00	Uwe Günther	Bundle stratification of \mathcal{PT} -symmetric 4×4 matrix systems and fourth-order spectral branch points of MHD α^2 -dynamoes
COFFEE BREAK	16:10 - 16:30		
Plenary Session 4 Chair: Hendrik Geyer	16:30 - 17:00	Haydar Uncu	Solutions of the Schrödinger equation for \mathcal{PT} Symmetric Dirac Delta Potentials in 1D
	17:10 - 17:40	Oleg Kirillov	Perturbation theory for non-self-adjoint operator matrices and its application to the MHD α^2 -dynamo

Accepted Posters

EVENT	PRESENTER	TITLE
Poster display	Ayşe Berkdemir	Woods-Saxon square approximation to the solution of Dirac equation for the Woods-Saxon potential with spin symmetry
	Eva-Maria Graefe	Non-Hermitian two-level systems: Crossing scenarios and Landau-Zener-type transitions
	Johannes N Kriel	Solving non-perturbative flow equations using Moyal products

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Thursday 24 November, 2005

EVENT	TIME	SPEAKER	TITLE
Plenary Session 1 Chair: Dieter Heiss	08:30 - 09:20	Joshua Feinberg	"Single Ring Theorem" and the Disk-Annulus Phase Transition
	09:30 - 10:00	Frieder Kleefeld	How about non-Hermitian Quantum Theory and the Correspondence Principle
COFFEE BREAK	10:10 - 10:30		
Plenary Session 2 Chair: Dieter Heiss	10:30 - 11:00	Emanuela Caliceti	Perturbation theory for \mathcal{PT} -symmetric Hamiltonians
	11:10 - 11:40	Patrick Dorey	On the reality (and unreality) of \mathcal{PT} -symmetric quantum mechanics
	11:50 - 12:40	Ali Mostafazadeh	Dynamically Equivalent but Kinematically Distinct Pseudo-Hermitian Quantum Systems
LUNCH BREAK	12:50 - 14:30		
Plenary Session 3 Chair: Hugh Jones	14:30 - 15:20	Jacobus Verbaarschot	Toda Lattices and Non-Hermitian Random Matrix Theories
	15:30 - 16:00	Frederik Scholtz	Metrics and more from Moyal products
COFFEE BREAK	16:10 - 16:30		
Plenary Session 4 Chair: Hugh Jones	16:30 - 17:00	André Weideman	Spectral Differentiation Matrices for the Numerical Solution of Schrödinger's Equation
WORKSHOP DINNER	19:00 for 19:30	Workshop Dinner for registered participants at Boschendal Restaurant Transport will be available at 18:45 (details to be announced)	

Friday 25 November, 2005

EVENT	TIME	SPEAKER	TITLE
Plenary Session 1 Chair: Carl Bender	08:30 - 09:20	Miloslav Znojil	Coupling of channels in \mathcal{PT} -symmetric models
	09:30 - 10:00	Hendrik Geyer	Choice of physical operators and uniqueness of the metric
COFFEE BREAK	10:10 - 10:30		
Plenary Session 2 Chair: Carl Bender	10:30 - 11:00	Joshua Feinberg	Quantized Normal Matrices: Some Exact Results and Collective Field Formulation
	11:10 - 11:40	Cüneyt Berkdemir	Bound State Solutions of the Dirac Equation for the pseudospin-symmetry Morse potential
	11:50 - 12:40	Maciej Nowak	Random Hermitian versus Random Nonhermitian Operators – unexpected links
LUNCH BREAK	12:50 - 14:30		
Plenary Session 3 Chair: Frederik Scholtz	14:30 - 15:20	Zafar Ahmed	\mathcal{PT} -symmetry in conventional quantum physics
	15:30 - 16:00	Géza Lévai	On the pseudo-norm in some \mathcal{PT} -symmetric potentials
COFFEE BREAK	16:10 - 16:30		
Plenary Session 4 Chair: Frederik Scholtz	16:30 - 17:00	Dieter Heiss	Reflections upon the thermodynamic limit of the Lipkin model