

AMSI, MASCOS & University of Melbourne Workshop on
Integrable Systems, Rigorous Asymptotics and Applications
August 22-23, 2004, AMSI, Melbourne, Australia

TIMETABLE

SUNDAY 22 AUGUST

11.00 - 11.50	P. Deift	Random Matrix Theory and Combinatorics: a Riemann-Hilbert Approach I.
12.00 - 13.00	P. Forrester	Generalisations of Fisher-Hartwig asymptotics.
14.00 -14.50	N. Joshi	Analytical results (inspired by asymptotics) for the first Painlevé equation.
15.00 - 15.50	A. Akhmetshin	Particle collisions in Hitchin systems on sin- gular curves.
16.30 - 17.20	P. Deift	Random Matrix Theory and Combinatorics: a Riemann-Hilbert Approach II.

MONDAY 23 AUGUST

09.00 - 09.50	P. Deift	Random Matrix Theory and Combinatorics: A Riemann-Hilbert Approach III.
10.00 - 10.50	N. Witte	Asymptotics of Painlevé equations arising from Random Matrix Theory.
11.30 - 12.20	R. Quispel	Discrete Integrable Systems.
12.30 - 13.20	W. Schief	Infinitesimal and finite deformations of quadrilateral surfaces. Hidden integrability.
14.00 -14.50	J. Roberts and D. Joglekar	Algebraic geometric approach to integrable maps of the plane.
15.00 - 15.50	J. Tuwankotta	Three-dimensional piecewise-linear inte- grable maps.
16.30 - 17.20	P. Deift	Random Matrix Theory and Combinatorics: a Riemann-Hilbert Approach IV.

LIST OF PARTICIPANTS

Professor P. Deift	Courant Institute of Mathematical Sciences, New York University
Professor P. Forrester	Department of Mathematics and Statistics, University of Melbourne
Professor R. Quispel	Department of Mathematics, Latrobe University
Professor N. Joshi	School of Mathematics and Statistics, University of Sydney
Dr. P. Norbury	Department of Mathematics and Statistics, University of Melbourne
Dr. T. Tuwankotta	Department of Mathematics, Latrobe University
Dr. J. Roberts	School of Mathematics, University of NSW
Dr. W. Schief	School of Mathematics, University of NSW
Dr. O. Foda	Department of Mathematics and Statistics, University of Melbourne
Dr. A. Akhmetshin	School of Mathematics and Statistics, University of Sydney
Dr. N. Clisby,	MASCOS CoE, University of Melbourne
Dr. S. Clarke	School of Mathematical Sciences, Monash University
Dr. N. Witte	Department of Mathematics and Statistics, University of Melbourne
Y-B Chan	Department of Mathematics and Statistics, University of Melbourne
J. Osborn	Department of Mathematics and Statistics, University of Melbourne
D. Jogia	School of Mathematics, University of NSW
J. Pettigrew	School of Mathematics, University of NSW

In addition Professor Deift gave a public lecture at the University of Melbourne on 24th August entitled *Universality for mathematical and physical systems*. In this talk he reminded the audience that all physical systems in equilibrium obey the laws of thermodynamics. In other words, whatever the precise nature of the interaction between the atoms and molecules at the microscopic level, at the macroscopic level, physical systems exhibit universal behaviour in the sense that they are all governed by the same laws and formulae of thermodynamics. The speaker recounted some of the history of these ideas starting with Wigner's model for the scattering of neutrons off large nuclei and how they have led mathematicians to investigate universal behaviour for a variety of mathematical systems. This is true not only for systems which have a physical origin, but also for systems which arise in a purely mathematical context such as the Riemann hypothesis, and a version of the card game solitaire called patience sorting.