

The AMSS-PolyU Joint Research Institute

Distinguished Lecture on The Ising Model – A Paradigm of Co-operative Behaviour by Prof. Tony Guttman



ABSTRACT

The Ising model is the most celebrated model of phase transitions, with a 90 year history. The model has an enormous range of applications. The biggest breakthroughs in solving the problem in two dimensions were due to Onsager, who in 1944 found the free energy (the zeroth field derivative), and to C.N. Yang, who found the magnetisation (the first field derivative) in 1952. For 50 years people tried and failed to find the susceptibility (the second field derivative). In the last decade great progress in determining the susceptibility has been made, which has, in turn, illuminated other problems. Both the history and recent progress will be discussed.

BIOGRAPHY

Tony Guttman obtained his PhD in mathematics in 1969 from the University of New South Wales, spent two years at the University of London, 15 years at the University of Newcastle, and has been a Professor at the University of Melbourne since 1987. He works in algebraic combinatorics, algorithm design, statistical mechanics and co-operative phenomena, and has more than 200 articles in the literature. He is a past President of the Australian Mathematical Society, the founder and first Director of the Australian Mathematical Sciences Institute, and is currently Director of the ARC Centre of Excellence for Mathematics and Statistics of Complex Systems. He is a Fellow of the Australian Academy of Science, a Fellow of the Australian Academy of Technological Sciences and Engineering and a winner of the Szekeres Medal of the Australian Mathematical Society

Date: 9th October, 2008 (Thursday)

Time: 3:30-4:30pm
(Tea reception starts at 3:00pm)

Venue: MI 603

**ALL ARE
WELCOME**

