



Institute For Pure and Applied Mathematics
University of California, Los Angeles presents a workshop in

Applications of Conformal Field Theory

October 15-19, 2001

This workshop will focus on applications of conformal field theory to condensed matter physics, where there are unique opportunities for convergence between mathematical abstraction and experimental reality. The study of phase transitions in dirty two-dimensional systems, including both percolation and disordered electronic systems, is a field of intense experimental, theoretical, and numerical study. Further theoretical developments are likely to require a deeper understanding of non-unitary conformal field theories which may, in turn, await the application of more sophisticated mathematical ideas. On a related but distinct front, the topological properties of strongly-correlated electron systems have attracted a great deal of interest as a result of the discovery of the fractional quantum Hall effect, unconventional magnetism, and high-temperature superconductivity. The unusual behavior of these systems may be a reflection of an underlying topological structure which is a part of the complex of ideas encompassing conformal field theory, Chern-Simons theory, and knot theory. Recently, these ideas have even formed the basis for a promising approach to quantum computation. Finally, the physics of quasi-one-dimensional materials is an active area of study where the techniques of conformal field theory have been successfully applied, but there are many open problems, particularly relating to the non-equilibrium transport properties of these systems. We believe that this workshop will allow for a far-ranging discussion of all of these issues and the mathematical challenges which they pose. Registration is open to all interested participants.

The following individuals will give invited presentations.

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| ▪ John Cardy | Oxford | ▪ Andreas Ludwig | UCSB |
| ▪ Claudio Chamon | BU | ▪ Giuseppe Mussardo | SISSA |
| ▪ Patrick Dorey | Durham,UK | ▪ Hiroshi Ooguri | CalTech |
| ▪ Bertrand Duplantier | Saclay | ▪ Nicholas Read | Yale |
| ▪ Fabian Essler | Warwick | ▪ Kareljan Schoutens | Amsterdam |
| ▪ M.P.A. Fisher | ITP, UCSB | ▪ Stanislav Smirnov | Royal Inst of Tech |
| ▪ Eduard Fradkin | Urbana | ▪ Thomas Spencer | IAS |
| ▪ Mike Freedman | Microsoft | ▪ Leonard Susskind | Stanford |
| ▪ JL Jacobsen | Orsay | ▪ Alexei Tsvetlik | Oxford/Brookhaven |
| ▪ Steven Kivelson | UCLA | ▪ Zhenghan Wang | Indiana |
| ▪ Jane Kondev | Brandeis | ▪ Shoucheng Zhang | Stanford |

Members of the organizing committee include Hubert Saleur (USC), Paul Fendley (Physics, Univ. Virginia), Chetan Nayak (UCLA)

The program is open to the entire mathematical and physical sciences communities.

Please visit our website for more information, including an online registration form:

<http://www.ipam.ucla.edu/programs/cftapp>

You can email questions to cftapp@ipam.ucla.edu