CONFORMAL FIELD THEORIES IN RANDOM DOMAIN AND STOCHASTIC LOEWNER EQUATIONS

Authors: Ilya A. Gruzberg and Leo P. Kadanoff

Recommended with a commentary by Dima Khlemnitski, University of Cambridge.

This is a wonderful subject for a Journal Club talk, which might report about exciting recent progress.

"In the last three years, new insights have permitted unexpected progress in the study of fractal shapes in two dimensions. A new approach has arisen through analytic function theory and probability theory and given a new way of calculating fractal shapes in critical phenomena and other problems like diffusion limited aggregation (DLA), the theory of random walks and percolation."

This citation is borrowed from the above preprint by Ilya A. Gruzberg and Leo P. Kadanoff. Almost simultaneously another preprint on the same subject was presented to the archive by Denis Bernard (hepth/0309080). Two very recent reviews would be useful to those, who would like to prepare the Journal Club talk:
J. Cardy, cond-mat/0209638
B. Duplantier, math-ph/0303034

A Journal Club talk on this subject could serve two purposes:
* give an insight on a new and exciting development of the theory;
* teach to a new and powerful method. There are no doubts in its extraordinary significance and beauty.