1035-60-1518 **Gregory F. Lawler*** (lawler@math.uchicago.edu), Department of Mathematics, University of Chicago, 5734 S. University Ave., Chicago, IL 60637-1546. *Conformal Invariance and 2-d Statistical Physics.*

Theoretical physicists have predicted that the scaling limit of two-dimensional lattice models at criticality possess some kind of conformal invariance. This has been by a number of physicists to predict (nonrigorously) "critical exponents" and other quantities for such systems. These predictions are very consistent with numerical simulations.

In the last ten years, many of these predictions have been established rigorously. I will give an introduction to this new work, first defining some of the discrete models: self-avoiding walk (polymers), loop-erased random walk (spanning trees), percolation, Ising model, and then describing the most important new object, the Schramm-Loewner evolution (SLE), which describes scaling limits for curves and boundaries of critical systems.

This presentation is intended for a general mathematical audience. (Received September 20, 2007)