

Meeting: 1003, Atlanta, Georgia, SS 30A, AMS Special Session on Analysis Problems in Modern Physics, I

1003-82-483 **Gregory F Lawler*** (lawler@math.cornell.edu), Department of Mathematics, Malott Hall,
Cornell University, Ithaca, NY 14853-4201. *Two-dimensional polymer measure.*

Polymer chains are often modeled by lattice self-avoiding walks. While this mathematical model is easy to define, it is notoriously difficult to analyze rigorously. Physicists have predicted that the scaling limit of planar self-avoiding walks, which I call the two-dimensional polymer measure, should be conformally invariant in some sense. Oded Schramm, Wendelin Werner and I showed that there is essentially only one measure on simple paths in the plane that satisfies conformal invariance and a certain "restriction property" (which a scaling limit of self-avoiding walks should satisfy). I will discuss this measure including some recent work concerning the "two-sided" polymer. (Received September 16, 2004)