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| Contribution Title: | THE SCALING LIMITS OF DYNAMICAL AND NEAR-CRITICAL PERCOLATION, AND THE MINIMAL SPANNING TREE |
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| Invited speaker: | Topical session |
| YRS seminar: | NO |

Let each site of the triangular lattice, with small mesh $\eta$, have an independent Poisson clock with a certain rate $r(\eta) = \eta^{3/4+o(1)}$ switching between open and closed. Then, at any given moment, the configuration is just critical percolation; in particular, the probability of a left-right open crossing in the unit square is close to $1/2$. Furthermore, because of the scaling, the expected number of switches in unit time between having a crossing or not is of unit order.

We prove that the limit (as $\eta \to 0$) of the above process exists as a Markov process, and it is conformally covariant: if we change the domain with a conformal map $\phi(z)$, then time scales locally by $|\phi'(z)|^{3/4}$. The same proof yields a similar result for near-critical percolation, and it also shows that the scaling limit of (a version of) the Minimal Spanning Tree exists, it is invariant under translations, rotations and scaling, but *probably* not under general conformal maps.

Joint work with Christophe Garban and Oded Schramm.