

Degenerate random environments

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In joint work with Tom Salisbury, we study a class of random directed graphs on Z^d that includes site percolation and oriented percolation. Motivated by the study of random walks in these random environments, we focus on those models in two dimensions for which the set C_o (sites reachable from the origin) is infinite almost surely. We describe phase transitions in the geometry of C_o and other relevant clusters in some of the more interesting cases.