

DYNAMICAL DISCRETE WEB AND ITS CONTINUUM ANALOGUE

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ABSTRACT. In joint work with L. Fontes, E. Schertzer and K. Ravishankar (ArXiv 0704.2706) we have studied exceptional times for the dynamical discrete web, a system introduced by Howitt and Warren of coalescing one-dimensional simple symmetric random walks evolving in an extra continuous dynamical time parameter s by independent updating of the Bernoulli variables that describe at any fixed s whether a walker at a given discrete space-time point moves to the left or right. Our results were motivated by those of Häggstrom-Peres-Steif and Schramm-Steif on dynamical percolation. One result is that there are exceptional values of s such that the walk from the origin $S^s(n)$ is asymptotically bounded by $K\sqrt{n}$ with a nontrivial dependence of the Hausdorff dimension of the set of such s on the parameter K . I also hope to discuss the dynamical Brownian web as a natural scaling limit of the dynamical discrete web. Here, the updating of Bernoulli direction variables is replaced by a Poissonian marking of special Brownian web space-time points that indicate when the left or right orientation of the special point changes.

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