where W (Kesten, 1978): Starting with one particle at T

Theorem represents the fitness of the individual. Particles represent individuals in a population, and their position between particles grows exponentially with positive probability. This process dies out almost surely if μ ≥ 2.

We take μ = 1. Let Lm = 1. Let

O Theorem (Kesten, 1978): Starting with one particle at x > 0, the number of particles grows exponentially with positive probability.

Lm/m \[ \sim \text{C/vN/2} \]

\[ \text{max} \text{ of the fitnesses of the individuals in } x, t \text{ is } \text{space-time white noise. Arrived at 3 conjectures:} \]

\[ (\log N - \log \log N)^2 \text{ correction is related to Conjecture 1.} \]


Notation


Durrett-Mayberry (2009) studied related model in context of Brownian motion with absorption. A population model with absorption

\[ \text{Genealogy of branching coalescent.} \]

\[ \text{Bolthausen-Sznitman coalescent - 
\text{conjecture 1 in the literature.}} \]

\[ \text{Related work: B´erard-Gou´er´e (2009), Durrett-Remenik (2009).} \]

\[ \text{B} \text{erard-Gouerere (2009), Durrett-Mayberry (2009) studied related model in context of Brownian motion with absorption.} \]

Our model: branching Brownian motion with absorption

\[ \text{Genealogy of branching coalescent} \]

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\[ \text{Durrett-Mayberry (2009) studied related model in context of Brownian motion with absorption.} \]

A population model with absorption

**Related work:**

- Durrett-Mayberry (2009) studied related model in context of Brownian motion with absorption.

**Bibliography:**

- Jason Schweinsberg
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Then the finite-dimensional distributions of (\(\Pi\)) of particles have the same ancestor at time \(t\). Theorem \(\Pi\) put down in a relatively "stable" configuration, with no particles \(t\). Lemma}

The "density" of particles at time \(t\) is denoted by \((\lambda(t))\) and \(\mu\) is chosen, \((\Pi)\) particles are in the same block if and only if \((\Pi)\). Theorem \(\Pi\) avoids the barrier at zero. Proof Outline: \[\frac{\Lambda^x}{x} \sim (x < \lambda)\]

The fast behavior of \(\Pi\).

For \(x = 0\), \(\lambda(t)\) is a martingale. 

The forward, or "drift," of \(\lambda(t)\) is proportional to the number of particles at time \(t\). Therefore, \(\lambda(t)\) is a continuous-time branching process.

Let \(\lambda(t)\) be the number of particles that reach \(t\). Theorem \(\Pi\) is a continuous-time branching process. a)

The key heuristic is that the behavior of the path \(\lambda(t)\) at large times is strongly deterministic. Law of large numbers, \(\frac{\lambda(t)}{t}\) is approximately deterministic. Theorem \(\Pi\) show that the behavior of a branching Brownian motion with par.

Find the level \(L\) such that \(\lambda(L) = 0\). Lemma \(\Pi\).

The key heuristic is that the behavior of the path \(\lambda(t)\) at large times is strongly deterministic. Law of large numbers, \(\frac{\lambda(t)}{t}\) is approximately deterministic. Theorem \(\Pi\) show that the behavior of a branching Brownian motion with par.

Find the level \(L\) such that \(\lambda(L) = 0\). Lemma \(\Pi\).
Because the rate of jumps of size at least $\Gamma$ is proportional to $Z^N(t)^{\alpha}$ and $\Gamma - 1$, we get convergence to a CSBP. Because the rate of jumps of size at least $\Gamma$ is proportional to $Z^N(t)$, we use the branching mechanism $\Psi(u) = u\log u + \frac{2\pi}{\Gamma - 1}$.

**Theorem** (Berestycki-Berestycki-Schweinsberg, 2009): Under the above initial conditions, there is an $a \in \mathbb{R}$ such that the finite-dimensional distributions of $\left(\frac{1}{N}\Phi_N((\log N)^3 t), t \geq 0\right)$ and those of $\left(\frac{1}{2\pi N M N ((\log N)^3 t), t > 0}\right)$ converge to the finite-dimensional distributions of the CSBP with branching mechanism $\Psi(u) = au + \frac{2\pi}{\Gamma - 1}u$.