

# Difference Approximation of Coalescing Diffusion Flows

Yannic Steenbeck<sup>1</sup>

**Abstract.** In 2011, I.Nishchenko [1] has shown a way to approximate the Arratia flow, a coalescent diffusion flow where the one-point motions are Brownian motions, in a weak convergence sense by a difference scheme. The strategy was to make a detour to the solutions of SDEs w.r.t. Brownian Sheet known to have  $l$ -point motions that converge to the  $l$ -point motions of the Arratia flow.[2]

We want to extend this interesting strategy to a wider class of coalescent diffusion flows.

## References

- [1] I. I. Nishchenko, *Discrete time approximation of coalescing stochastic flows on the real line*, Theor. Stochast. Process (2011), **17(33)**, no. 1, 70–78.
- [2] A. A. Dorogovtsev, *One Brownian stochastic flow*, Theor. Stochast. Process. (2004), **10 (26)**, no. 3–4, 21–25.

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<sup>1</sup>Technische Universitat Braunschweig (Germany). Email:y.steenbeck@tu-bs.de