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Evolution of the ABC model among the segregated configurations in the zero-temperature limit. (English. French summary) Zbl 1342.60174

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Summary: We consider the ABC model on a ring in a strongly asymmetric regime. The main result asserts that the particles almost always form three pure domains (one of each species) and that this segregated shape evolves, in a proper time scale, as a Brownian motion on the circle, which may have a drift. This is, to our knowledge, the first proof of a zero-temperature limit for non-reversible dynamics whose invariant measure is not explicitly known.

MSC:

- 60K35** Interacting random processes; statistical mechanics type models; percolation theory
- 60J65** Brownian motion
- 82C20** Dynamic lattice systems (kinetic Ising, etc.) and systems on graphs in time-dependent statistical mechanics
- 82C22** Interacting particle systems in time-dependent statistical mechanics

Cited in **3** Documents

Keywords:

[ABC model](#); [scaling limits](#); [Brownian motion](#); [metastability](#); [tunneling](#)

Full Text: [DOI](#) [Euclid](#) [arXiv](#)

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