

From the lifted TASEP to true self-avoiding walks

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The lifted TASEP is a variant of the totally asymmetric exclusion process where at each time-step, instead of trying to move forward a uniformly chosen particle, we try to move forward a marked particle which then may pass the marker to another particle. It was introduced by physicists as a toy model for non-reversible event-chain Monte-Carlo algorithms, which are expected to reach equilibrium faster than reversible dynamics. We will study the behaviour of this system on the integer line by evidencing a connection with true self-avoiding walks, yielding timescales of the dynamics. This is based on joint work with Clément Erignoux, Werner Krauth, François Simenhaus and Cristina Toninelli.

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