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**Fast algorithms for classical X− >0 diffusion-reaction processes** FABRICE THALMANN, University of Strasbourg and Insitut Charles Sadron CNRS,Strasbourg,France, NAM-KYUNG LEE, Department of Physics, Sejong University, Seoul, South-Korea — The Doi formalism [J.Phys.A 9, p1465, 1976] treats a reaction-diffusion process as a quantum many-body problem. We use this second quantized formulation as a starting point to derive a numerical scheme for simulating X− >0 reaction-diffusion processes, following a well-established time discretization procedure. In the case of a reaction zone localized in the configuration space, this formulation provides also a systematic way of designing an optimized, multiple time step algorithm, spending most of the computation time to sample the configurations where the reaction is likely to occur.

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