

Fate of a particle surrounded by a (vanishing) sea of (sub)diffusive traps

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Reaction dynamics involving subdiffusive species is an interesting topic with only few known results, being the exact ones especially scarcer. In this talk I present some results for the reaction dynamic of a static or (sub)diffusive particle surrounded by a sea of (sub)diffusive traps in one dimension. Some long-time exact asymptotic results for the survival probability of the particle have been recently obtained for the system in which the particle and traps are characterized by different anomalous diffusion exponents. However, especial cases of this system defy solution. An interesting version of this system is that in which the density of traps is time-dependent. I show that, for some cases in which the density of traps vanishes, the survival probability of the particle can be determined exactly for all times.