

## Survival rate for a certain class of random walks in random obstacles

Consider a random walk on the  $d$ -dimensional integer lattice, killed upon hitting the obstacles, which are placed independently with probability  $p$  at each discrete time-space point. In general, the survival rate for this model is difficult object to analyze. For example, even its existence does not seem to be known. We bring a good news that this model becomes somehow manageable for a certain class of random walk with unbounded jumps. We first prove the existence of the survival rate and establish its continuity in the parameter  $p$ . Here, the survival rate is identified with the zero-temperature limit from its positive temperature counterpart. Moreover, we identify the precise asymptotics of the survival rate as  $p$  tends to 1. This is a joint work with Francis Comets and Ryoki Fukushima.