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Processus de zero-range avec particule marquée. (Zero-range process with a tagged particle).
(French) Zbl 0703.60101
Ann. Inst. Henri Poincaré, Probab. Stat. 26, No. 1, 5-17 (1990).

Summary: We study a zero-range process [for which g(k)≡ 1 if $k > 0$] in equilibrium, having as initial distribution the invariant geometric product measure μ_ρ ($0 \leq \rho \leq 1$). We prove that the μ_ρ are extremal invariant in the transient case. We then prove in the symmetric case a strong law of large numbers and a central limit theorem for the position of a "supplementary" (i.e. second class) particle, and also the asymptotic independence of a finite number of second class particles. Finally for the position of a tagged particle we prove a strong law of large numbers and, in the symmetric case, a central limit theorem.

MSC:

60K35 Interacting random processes; statistical mechanics type models; percolation theory
60F05 Central limit and other weak theorems

Keywords:

zero-range process; invariant geometric product measure; strong law of large numbers; central limit theorem

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