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**Stochastic models of exotic transport.** (English) Zbl 1059.82529

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Summary: Non-typical transport phenomena may arise when randomly driven particles remain in an active relationship with the environment instead of being passive. If we attribute to Brownian particles an ability to induce alterations of the environment on suitable space-time scales, those in turn must influence their further movement. In that case a general feedback mechanism needs to be respected. By resorting to a specific choice of the particle-bath coupling, an enhanced (super-diffusion) or non-dispersive diffusion-type processes are found to exist in generically non-equilibrium contexts.

**MSC:**

82C70 Transport processes in time-dependent statistical mechanics
60K35 Interacting random processes; statistical mechanics type models; percolation theory



**Keywords:**

stochastic models; exotic transport; randomly driven particles; Brownian particles; space-time scales; local conservation laws; feedback mechanism; particle-bath coupling; enhanced diffusion; superdiffusion; nondispersive diffusion; nonequilibrium systems

**Full Text:** DOI

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