

Equilibrium and Non-equilibrium Statistical Mechanics
A conference in honor of François Dunlop

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Microscopic stochastic particle models for Fick and Fokker-Planck diffusion equations

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Diffusion in not homogeneous media can be described both by the Fick and the Fokker-Planck diffusion equation. The question whether one of the two description has to be considered the correct one is often debated in the scientific literature. Using a microscopic approach, we show that both the descriptions are reasonable and that they correspond to different realizations of spatial inhomogeneities.

This work is in collaboration with D. Andreucci (Roma), M. Colangeli (L'Aquila), and D. Gabrielli (L'Aquila).

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