Mathematical Physics

Kinetic models with randomly perturbed binary collisions

Federico Bassetti, Lucia Ladelli, Giuseppe Toscani

(Submitted on 3 Nov 2010)

We introduce a class of Kac-like kinetic equations on the real line, with general random collisional rules, which include as particular cases models for wealth redistribution in an agent-based market or models for granular gases with a background heat bath. Conditions on these collisional rules which guarantee both the existence and uniqueness of equilibrium profiles and their main properties are found. We show that the characterization of these stationary solutions is of independent interest, since the same profiles are shown to be solutions of different evolution problems, both in the econophysics context and in the kinetic theory of rarefied gases.

Subjects:	**Mathematical Physics (math-ph)**
MSC classes:	82C40, 60F05
Cite as:	**arXiv:1011.0838v1 [math-ph]**

Submission history

From: Federico Bassetti [view email]
[v1] Wed, 3 Nov 2010 10:19:59 GMT (25kb)

Which authors of this paper are endorsers?