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Alexander Grigo* (grigo@math.ou.edu), Department of Mathematics, University of Oklahoma, Norman, OK 73019. *On Certain Non-Hamiltonian Billiard-like Models in Statistical Mechanics.*

Classical billiards are special models of classical mechanics for which many rigorous results are available. In particular, dispersive billiards have strong statistical properties and are widely used as fundamental models of (classical) statistical mechanics. In this talk it will be shown how certain non-Hamiltonian systems arising in models of statistical mechanics can be reduced to billiard-like dynamical systems. Using techniques from classical dispersive billiards, statistical properties for these models are derived and are complemented by numerical studies. (Received August 26, 2013)