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Discrete Time Models for Some Statistical Problems

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In this communication, two different statistical problems are presented under a same paradigm. Two discrete time operators governing the evolution of two different statistical problems, one of them that models the random trading of a collectivity of free economic agents and another one that models the classical problem of an ideal gas. The equilibrium distributions for both problems are the Exponential wealth distribution for the economic system and the Gaussian velocity distribution for the ideal gas. The motivation and the derivation of these models that can be seen as a discrete time alternative or extensions of the continuous Boltzmann equation are explained. (These works were made in collaboration with J.L. Lopez [ESAIM Proceedings, 36, 189-196, 2012] and E. Shivanian [Physica A, 391, 2600-2607, 2012], respectively).

Biography:

Ricardo Lopez-Ruiz, M.S., Ph.D., works as an Associate Professor in the Department of Computer Science and Systems Engineering, Faculty of Science, University of Zaragoza, Spain. He also serves as an Associate Researcher in Complex Systems at the School of Mathematics, University of Zaragoza, Spain. He has published over one hundred papers in journals, proceedings and books and he has presented about thirty talks at various meetings and conferences. His areas of interest include statistical complexity and nonlinear models, chaotic maps and applications, multi-agent systems, and econo-physics.