Mixing innovative and imitative dynamics in Evolutionary Games

Trabalho #20

> Poster, Apresentação Oral
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Innovation and evolution are two processes of paramount relevance for social and biological systems. In general, the former allows the introduction of novelty, while the latter moves the system in its phase space. We investigate the behavior of a population composed of both kinds of agents. The model is analyzed by means of analytical calculations and numerical simulations in different topologies. Results indicate that this mixing can be detrimental to cooperation near phase transitions. We note that Imitative dynamics have been broadly studied for different games, updating rules and connection topologies. Nevertheless, innovative mechanisms still require deeper studies in the evolutionary context.

Comentários adicionais

> Gostaria de solicitar que os organizadores considerem o trabalho para apresentação Oral. Apesar da data ter passado, acredito que esse tema tem uma relevância muito alta dentro das linhas de pesquisa do departamento em sistemas complexos, em especial nas linhas de epidemiologia desenvolvidas pelo professor Sílvio bem como biofísica.
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> Esse trabalho resultou no artigo (https://journals.aps.org/pre/abstract/10.1103/PhysRevE.97.042305), publicado no Physical Review E e é uma continuação direta dos trabalhos desenvolvidos e publicados em conjunto com os professores Matjaz Perc (Univerza Mariboru, Slovenia) e Jaferson Kamphorst (UFMG):
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> Stochastic win-stay-lose-shift strategy with dynamic aspirations in evolutionary social dilemmas - https://journals.aps.org/pre/abstract/10.1103/PhysRevE.94.032317
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> Evolutionary mixed games in structured populations: Cooperation and the benefits of heterogeneity - https://journals.aps.org/pre/abstract/10.1103/PhysRevE.93.042304