

Dynamics of spatial evolutionary games on the triangular lattice.

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We study the dynamics of a spatial evolutionary game based on the modified prisoners' dilemma[1]. We consider the game on the triangular lattice and modify rule accordingly. Dynamics is similar to those on the square lattice[2, 3]. The game features a series of sharp transitions between several regimes, controlled by the interaction parameter between players, and non-trivial geometric rearrangements of the game field. We investigate critical properties of the resulting phase transitions and present quantitative and qualitative comparison with the results of the previous study on the square lattice.

References

- [1] Nowak M.A. May R.M. *Evolutionary games and spatial chaos*. Nature, 359, 1992.
- [2] S. Kolotev A. Malyutin E. Burovski S. Krashakov L. Shchur. *Dynamic fractals in spatial evolutionary games*. Phys. A: Stat. Mech. and Appl., 499, 2018.
- [3] S. Kolotev A. Malyutin E. Burovski S. Krashakov L. Shchur. *Interfaces in evolutionary games*. Journal of Physics: Conference Series. 955, 2018.