

PATCHY INVASION OF ALIEN SPECIES IN THE PRESENCE OF LONG-DISTANCE DISPERSAL

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ABSTRACT

Biological invasion of alien species is regarded as one of the major threats to ecosystems all around the world and understanding of spatiotemporal patterns arising in invasive species spread is necessary for successful management and control of harmful species. The conventional view of the typical invasion pattern as a continuous population traveling front has been recently challenged by both empirical and theoretical results revealing a more complicated alternative scenario of patchy invasion. Theoretical study of patchy invasion has been restricted so far to the case where the invasive species spreads by predominantly short-distance dispersal. Meanwhile there is considerable evidence that the long-distance dispersal is a strategy that is used by many species. In my talk I will discuss how the patchy invasion can be modified by the effect of the long-distance dispersal [1]. Among the other results the significant impact of the fat tails of the dispersal kernels on the accuracy of computation will be demonstrated when patchy invasion is modelled numerically.

References

- [1] L.A.D. Rodrigues, D.C.Mistro, E.R.Cara, N.B.Petrovskaya, S.V.Petrovskii. (2015) *Patchy Invasion of Stage-Structured Alien Species with Short-Distance and Long-Distance Dispersal*, Bull Math Biol, 77(8) , pp. 1583–1619.