CONDITIONS OF COEVOLUTIONARY SYMPATRIC SPECIATION IN THE POINT MODEL OF ECOSYSTEM

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Study investigates the conditions of sympatric speciation, ie the occurrence of species in the absence of geographic isolation. This takes into account ecosystems change in response to a mutational change of one species, which leads to the formation of additional ecological niches. The basis of the underlying assumption that the selection of individuals of one population of different life strategies may lead to the formation of new species in terms of spatial homogeneity. In this paper, a vital strategy for development of the two represent different properties of the growth rate and the so-called victim's attractiveness to predators. It is assumed that these properties are nonlinearly dependent on a single phenotypic parameter (this may be the thickness of the protective shell, tail length, brightness, color, etc.). We have shown that in this case the curve of the multiplication factor of the species from the phenotypic parameter evolution may have two peaks. Each of these peaks correspond to specific life strategy. We also consider the possibility and conditions for the transition from one life to another strategy.

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