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Modeling the competition of species for territory	
<p>We consider territory-based population dynamics models and investigate the spread of species and their competition for territories where the change of the occupied territory is examined instead of the number of individuals. All of species can occupy empty patches and some (or all) of them can occupy patches that are already occupied by others. The latter phenomenon is called overcolonization. In case of two species we can suppose that there is no interaction between species. In this case only boundary equilibria exist. In other case some hierarchical relations are assumed between populations, so interior equilibrium exists which is globally asymptotically stable. The model of general overcolonization is less studied since the analysis is extremely difficult. We show that the output of the species' fight depends on the initial conditions (interior equilibrium exists however it is not globally asymptotically stable). Finally, we consider even more general models in which the colonization and extinction rates depend on the environment in different ways. In real life both the colonization capability and the extinction can depend on the neighborhood (or density) of the atomic patches. The behavior of such models is much more complicated. We consider different cases in which neighbors can strengthen or even weaken each other. Our results are illustrated by realtime demonstrations in <i>Mathematica</i>.</p>	