

## **Game-theoretic problem of spatial allocation and its numerical analysis**

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We first present a model of spatial allocation of infinite populations of species in a region  $A$  (subset) in a Euclidean space (in real-life applications of dimension 2 or 3). The species produce a distribution (probability measure) of their location in  $A$ . The payoff of each individual depends on its own location and the distribution of allocation of its own and the remaining species. In simple, but still interesting cases there may be only one species: some models with two species may be interpreted as describing the prey-predator situations. We are interested in equilibria of a model which are distributions of the species (of course, one distribution for each) such that no individual will have an incentive to deviate. Some theorems on the existence and shape of equilibria in particular models are presented and finally we present methods to find equilibria by means of numerical techniques. We also present the results received for specific models and data. Some of the results presented are due to A. Wiszniewska-Matyszek and A. Wieszorek.