RELATIONSHIP BETWEEN MORISITA'S MODEL FOR ESTIMATING THE ENVIRONMENTAL DENSITY AND THE GENERALIZED EULERIAN NUMBERS

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Abstract. The environmental density has been defined (Morisita (1971, *Statistical Ecology*, the Pennsylvania State University Press, 379–401)) as the value of a habitat expressing its unfavorableness for settling of an individual which has a strong mutual-repulsive influence to other individuals in an environment. Morisita studied mutual repulsive behavior of ant lions (Glenuroides japanicus) and provided a recurrence relation without an explicit solution for the probability distribution of individuals settling in each of two habitats in terms of the environmental densities and the numbers of individuals introduced. In this paper the recurrence relation is explicitly solved; certain interesting properties of the distribution are discussed including its relation to the generalized Eulerian numbers and the estimation of the parameters.