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**The life spans of a Bellman-Harris branching process with immigration.** (English. Russian original) [Zbl 0668.60076](#)

*J. Sov. Math.* 38, No. 5, 2198-2210 (1987); translation from Probability distributions and mathematical statistics, Collect. Artic., Tashkent 1986, 60-82 (1986).

[For the entire collection see [Zbl 0626.00025](#).]

One considers two schemes of the Bellman-Harris process with immigration when

a) the lifetime of the particles is an integral-valued random variable and the immigration is defined by a sequence of independent random variables;

b) the distribution of the lifetime of the particles is nonlattice and the immigration is a process with continuous time.

One investigates the properties of the life spans of such processes. The results obtained here are a generalization to the case of Bellman-Harris processes of the results of *A. M. Zubkov* [*Theory Probab. Appl.* 17, 174-183 (1972; [Zbl 0267.60084](#)); translation from *Teor. Veroyatn. Primen.* 17, 179-188 (1972)] obtained for Markov branching processes. For the proof one makes use in an essential manner of the well-known Goldstein inequalities estimating the generating function of the Bellman-Harris process in terms of the generating functions of the imbedded Galton- Watson process.

**MSC:**

[60J80](#) Branching processes (Galton-Watson, birth-and-death, etc.)

Cited in 1 Document

**Keywords:**

[Bellman-Harris process with immigration](#); [Galton-Watson process](#)

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