

On new results for different record schemes

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Some non-classical record constructions are considered.

1) The representations of record ranges via sums of independent identically distributed exponential random variables are obtained for asymmetrical Laplace distributions. This result generalizes the corresponding relations for record values in the cases of exponential and negative exponential distributions.

2) The representation of record values based on sequences of non-identically distributed random variables in terms of independent summands is also obtained.

3) It is discussed, using the examples of exponential and geometrical distributions, how the process of discretization (up to seconds, up to meters or up to thousands of individuals) of observed results can vary the numbers of records in the sequences of random variables.

4) Independent random variables X_1, X_2, \dots, X_n having the standard uniform distribution and the upper and lower record values in this set are considered. The problem how to maximize (taking into account some consecutively observed values x_1, x_2, \dots, x_k of these X -s) the expectation of sums of records in this sequence under the optimal choice of the corresponding variable X_k (instead of X_1) as the initial record value is under consideration.

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