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On a sequence of integral operators associated with power Lindley distribution

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ABSTRACT. The aim of this paper is to introduce a new sequence of probabilistic-type integral operators based on the power Lindley distribution. We study their approximation properties in spaces of weighted continuous functions, providing estimates for the rate of convergence in terms of various moduli of smoothness, as well as an asymptotic formula. Moreover, several illustrative examples and comparisons are presented. Finally, we consider a generalization of the power Lindley distribution and compute some important related quantities, such as the information potential, expected value, and variance. The paper ends with an application of the proposed integral operators to the derivation of bounds for the information potential.

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