Products and linear operators between α-Šerstnev probabilistic normed spaces

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Abstract

Let α be a positive real number. A probabilistic normed space (V, ν, τ, τ^*) is called by the authors of this work α-Šerstnev if the probabilistic norm ν satisfies the following condition: $\nu_{\lambda p}(x) = \nu_p \left(\frac{x}{|\lambda|^\alpha}\right)$, for all $x \in \mathbb{R}^+$, $p \in V$ and $\lambda \in \mathbb{R} \setminus \{0\}$. One describes how α-Šerstnev and α-simples spaces are closed under basic set operations, although some extraconditions are required to guaranty the structure of a PN space. Finally, one gives some special α-Šerstnev spaces and some results with regard to linear operators between them.

KEY WORDS: Probabilistic Normed spaces;α-Šerstnev space; τ-Product; linear operators
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