

Approach to the construction of the spaces $S\{D^p\}[\mathbb{R}^{\{\infty\}}]$ for $1 \leq p \leq \infty$

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Abstract

The objective of this paper is to construct an extension of the class of Jones distribution Banach spaces $SD^p[\mathbb{R}^n]$, $1 \leq p \leq \infty$, which appeared in the book by Gill and Zachary (missing citation) to $S\{D^p\}[\mathbb{R}^{\{\infty\}}]$ for $1 \leq p \leq \infty$. These spaces are separable Banach spaces, which contain the Schwartz distributions as continuous dense embedding. These spaces provide a Banach space structure for Henstock-Kurzweil integrable functions that is similar to the Lebesgue spaces for Lebesgue integrable functions.

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References