



**THE HUMBERT-BESSEL FUNCTIONS,
STIRLING NUMBERS AND PROBABILITY
DISTRIBUTIONS IN COINCIDENCE PROBLEMS**

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Abstract

The Humbert-Bessel is a multi-index function with various applications in electromagnetism. New families of functions sharing some similarities with Bessel functions are often introduced in the mathematical literature, but at a closer analysis they are not new, in the strict sense of the word, and are shown to be expressible in terms of already discussed forms. This is indeed the case of the remodified Bessel functions, whose properties have been analyzed within the context of coincidence problems in probability theory. In this paper, we show that these functions are particular cases of the Humbert-Bessel ones.

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