On coefficients of Kapteyn-type series

Abstract. Quite recently Jankov and Poganj [8] derived a double integral representation of the Kapteyn-type series of Bessel functions. Here we completely describe the class of functions $\Lambda = \{\alpha\}$, which generate the mentioned integral representation in the sense that the restrictions $\alpha|_{\mathbb{N}} = (\alpha_n)_{n \in \mathbb{N}}$ is the sequence of coefficients of the input Kapteyn-type series.