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The Parametric Pascal Rhombus,
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Abstract

In this note, we first show a connection between the complete central coefficients of the Pascal rhombus and the row sums of the left-bounded rhombus. Then, we introduce the concept of parametric Pascal rhombus and left-bounded parametric rhombus, and give the Riordan array characterizations for them. Moreover, we use the reflection principle to prove a relationship between the entries of the parametric Pascal rhombus and the left-bounded parametric rhombus. By applying this result, we show that the complete central coefficients of the parametric Pascal rhombus are the same as the row sums of the left-bounded parametric rhombus. Finally, we present several examples to illustrate that numerous combinatorial sequences appear in parametric Pascal rhombus and left-bounded parametric rhombus.