New Kinds of Hypergeometric matrix functions

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Abstract:

The present paper deals with the definition and study of new kinds of hypergeometric matrix functions within complex analysis. We also get the radius of regularity and matrix recurrence relations are then developed for l(m; n)-hypergeometric matrix function of two complex variables. We give a different approach to prove the effect of the differential operator on this function. Finally, another hypergeometric matrix function, namely, p l(m; n)-hypergeometric matrix function of two complex variables are defined, its components when the positive integer p is greater than one, provide a matrix partial differential equation satisfied by these function and some of their properties are investigated.

Keywords:

l(m; n)-Hypergeometric matrix function; p l(m; n)-Hypergeometric matrix function; Matrix differential equation; Differential operator.

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