On Tricomi and Hermite-Tricomi matrix functions of complex variable

Ayman Shehata

Abstract:

In this paper, Tricomi and Hermite-Tricomi matrix functions are introduced starting from the Hermite matrix polynomials. The convergence, radius of regularity, integral form, generating matrix functions, matrix recurrence relations satisfied by these Tricomi matrix functions are derived. Finally, the generating matrix functions, matrix recurrence relations, addition theorems for the Hermite-Tricomi matrix functions are given and matrix differential equations satisfied by them are presented.

Keywords:

Hermite matrix polynomials; Tricomi matrix functions; Hermite-Tricomi matrix functions; Matrix differential equations; Matrix recurrence relations; Differential operator.

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