

GENERATION OF LINEAR ALGEBRAIC SPACES FOR MULTIPLE HYPERGEOMETRIC FUNCTIONS

Anand Singh & H.S. Dhimi*

Department of Mathematics

University of Kumaun

Almora Campus,

Almora (U.P.) 263601 India

The present paper deals with the generation of linear algebraic spaces for the multiple hypergeometric functions by taking parameters as matrices of order $(n \times n)$. Applications of these spaces in tensor algebra have been also discussed.

Key Words :- Vector space / Contravariant tensor / Covariant tensor / Matrices / Parameters.

1. INTRODUCTION

The process of multiplicative group formation has been discussed in our earlier works^[1-3]. Motivated by a desire to go ahead in the field of abstract algebra with the aim of finding linear algebraic expressions for special functions, one may extend the theory of scalar function of scalar variables to those of matrix variables. The technique developed for different functions by Mathai⁷ Kumbhat¹⁰, Kabe⁸ John Greene⁹ Saxena et al¹¹ Mathai & Pederzoli⁷ can be cited in this context. The matrix arguments of such function may generate multiplicative group but our interest of obtaining linear algebraic forms can be served only if the parameters are taken as matrices of order $(n \times n)$ so that the multivariate functions