



**REPRESENTATION OF LIE ALGEBRA  $K_5$  AND  
TWO-INDEX TWO-VARIABLE HERMITE  
MATRIX POLYNOMIALS**

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**Abstract**

Pathan et al. [M. A. Pathan, M. G. Bin-Saad and F. Al-Sarhi, On matrix polynomials associated with Hermite matrix polynomials, Tamkang J. Math. 46(2) (2015), 167-177] defined the two-index two-variable Hermite matrix polynomials. Using them, we give a representation of the Lie algebra  $K_5$  [Willard Miller, Jr., Lie theory and special functions, Mathematics in Science and Engineering, Vol. 43, Academic Press, New York, London, 1968].

**Keywords and phrases:** Lie algebra  $K_5$ , two-index two-variable Hermite matrix polynomials.

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