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ON SUMS OF BIVARIATE FIBONACCI POLYNOMIALS AND BIVARIATE LUCAS POLYNOMIALS

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Abstract: In this paper, we present the sum of $s+1$ consecutive member of Bivariate Fibonacci Polynomials and Bivariate Lucas Polynomials and related identities consisting even and odd terms. We present its two cross two matrix and find interesting properties such as nth power of the matrix. Also, we present the identity which generalizes Catlan's, Cassini's and d'Ocagne's identity. Binet's formula will employ to obtain the identities.

Keywords and Phrases: Bivariate Fibonacci Polynomials, Bivariate Lucas Polynomials, Binet's formula and two cross two matrix.

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1. Introduction

In [4, 5, 6], Catalani define generalized bivariate polynomials, from which specifying initial conditions the bivariate Fibonacci and Lucas polynomials are obtained