International Journal of Mathematics Vol. 27, No. 11 (2016) 1650086 (13 pages) © World Scientific Publishing Company DOI: 10.1142/S0129167X16500865



## Generalized Jacobi–Koornwinder's-type Bernstein polynomials bases transformations

Mohammad A. AlQudah\*

School of Basic Sciences and Humanities German Jordanian University, Amman 11180, Jordan mohammad.qudah@gju.edu.jo

Maalee N. AlMheidat

Department of Basic Sciences, University of Petra Amman 11196, Jordan malmheidat@uop.edu.jo

> Received 16 March 2015 Revised 2 February 2016 Accepted 3 August 2016 Published 14 October 2016

This paper provides an explicit closed form of generalized Jacobi–Koornwinder's polynomials of degree  $r \leq n$  in terms of the Bernstein basis of fixed degree n. Moreover, explicit forms of generalized Jacobi–Koornwinder's type and Bernstein polynomials bases transformations are considered.

Keywords: Jacobi-Koornwinder's polynomials; Bernstein polynomials; transformation; basis

Mathematics Subject Classification 2010: 33C45, 33C50, 42C05, 05A10, 33B15

## 1. Introduction

<sup>\*</sup>Corresponding author.