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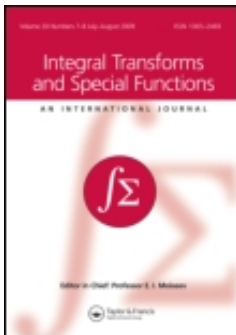
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A general class of polynomials associated with generalized Mittag–Leffler function

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Abstract

Several authors have defined polynomial sets by means of general Rodrigues formulae in different forms. In this article, an attempt is made to provide an elegant unification of several classes of polynomials. We investigate a general class of polynomials

$\{A_{qn}^{(\alpha, \beta, \gamma, \delta)}(x; a, k, s)/n = 0, 1, 2, \dots\}$ by means of a generalized Rodrigues formula defined as (2) associated with a generalized

Mittag–Leffler function $E_{\alpha, \beta}^{\gamma, q}(z)$, which is recently introduced by Shukla and Prajapati [Shukla, A.K. and Prajapati, J.C., On a generalisation of Mittag–Leffler function and its properties. *Journal of Mathematical Analysis and Applications*, article in press]. We have also derived several families of generating relations, finite summation formulae for equation (2) by employing operational techniques and bilateral-generating relation. In the end, several special cases have been discussed.

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Keywords

- Bilateral generating relation,
- Class of polynomials,
- Differential operator,
- Finite summation formulae,
- Generating relations,
- Rodrigues formula

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