

MOMENTS OF JACOBI POLYNOMIALS WITH NON-CLASSICAL PARAMETERS

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In this poster we will present two different approaches to the computation of the moments of Jacobi Polynomials with non classical parameters of the form $\alpha_m = m + 1/2$, $\beta_m = -m - 1/2$. Both of them start from defining the weight function $w(z, \alpha_m, \beta_n) = (1 - x)^{\alpha_m}(1 + x)^{\beta_m}$ continuously in a contour Γ on a Riemann Surface. The first approach is an explicit computation by parametrizing Γ , and the second is by using residues on a closed curve obtained by deforming the contour Γ and performing a change of variables. This problems appeared in the search for the definite integral of the negative power of a quartic polynomial.

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