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Zilong Song*, Department of Mathematics and Statistics, York University, Toronto, ON M3J 1P3, Canada, and **R Wong**, Department of Mathematics, 83 Tat Chee Avenue, Kowloon, Hong Kong. *Asymptotics of Pseudo-Jacobi Polynomials with Varying Parameters.*

In this talk, we present the asymptotic behavior of the Pseudo-Jacobi polynomials $P_n(z; a, b)$ as $n \rightarrow \infty$ for z in the whole complex plane. These polynomials are also known as the Romanovski-Routh polynomials. They occur in quantum mechanics, quark physics and random matrix theory. When the parameter a is fixed or $a > -n$, there is no real-line orthogonality. Here, we consider the case when the parameters a and b depend on n ; more precisely, we assume $a = -(An + A_0)$, $A > 1$ and $b = Bn + B_0$, where A, B, A_0, B_0 are real constants. Our main tool is the asymptotic method developed for differential equations with a large parameter. (Received September 21, 2017)