

1145-33-769

Gaurav Bhatnagar* (bhatnagarg@gmail.com) and **Mourad E. H. Ismail.** *Orthogonal polynomials associated with a continued fraction of Hirschhorn.*

We study orthogonal polynomials associated with a continued fraction due to Hirschhorn. Hirschhorn's continued fraction contains as special cases the famous Rogers–Ramanujan continued fraction and two of Ramanujan's generalizations. The orthogonality measure of the set of polynomials obtained has an absolutely continuous component. We find generating functions, asymptotic formulas, orthogonality relations, and the Stieltjes transform of the measure. Using standard generating function techniques, we show how to obtain formulas for the convergents of Ramanujan's continued fractions, including a formula that Ramanujan recorded himself as Entry 16 in Chapter 16 of his second notebook. (Received September 14, 2018)