1099-33-83 **Constanze Liaw***, One Bear Place #97328, Waco, TX 76798, and **Lance Littlejohn**, **Jessica Stewart** and **Quinn Wicks**. *Spectral Analysis of the Exceptional Jacobi Differential Expression for Extreme Parameter Choices.*

The Bochner Classification Theorem (1929) characterizes the polynomial sequences $\{p_n\}_{n=0}^{\infty}$, with $\deg(p_n) = n$ that simultaneously form a complete set of eigenstates for a second order differential operator and are orthogonal with respect to a positive Borel measure having finite moments of all orders: Hermite, Laguerre, Jacobi and Bessel polynomials. In 2009, Gómez-Ullate, Kamran, and Milson found that for sequences $\{p_n\}_{n=1}^{\infty}$, with $\deg(p_n) = n$ (i.e. without the constant polynomial) the only such sequences are the *exceptional* Laguerre and Jacobi polynomials. We discuss the corresponding exceptional Jacobi differential expression for a certain extreme parameter choice. The resulting self-adjoint operator can be studied in two spaces – one of which falls into the classical Glazman, Krein, Naimark theory; the other applies the left-definite theory introduced by Littlejohn and Wellman. In each case, the operator will have a complete set of eigenfunctions. (Received January 28, 2014)

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