

## Bispectral Laguerre and Jacobi type polynomials

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**Abstract:** We study the bispectrality of Laguerre and Jacobi type polynomials, which we define by taking linear combinations of a fixed number of consecutive Laguerre or Jacobi polynomials, respectively. These polynomials are eigenfunctions of higher-order differential operators and include, as particular cases, the Krall-Laguerre and the Krall-Jacobi polynomials. We show that these polynomials always satisfy higher-order recurrence relations (i.e., they are bispectral). We also prove that the Krall-Laguerre and the Krall-Jacobi families are the only Laguerre and Jacobi type polynomials which are orthogonal with respect to a measure in the real line. This is a joint work with Antonio J. Durán.