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Orthogonality and bispectrality.

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The concept of bispectrality (in short, a function in two variables that is an eigenfunction for an operator in each variable) is especially interesting for orthogonal polynomials. Indeed, depending on the type of operators (differential, difference, q-difference, etc.) and their orders, the bispectrality characterizes the most important families of orthogonal polynomials, from the classical, classical discrete or q -classical polynomials, to the Krall and exceptional polynomials. In my opinion, one of the most interesting (and difficult) problems in relation to orthogonality and bispectrality is the characterization of the two algebras associated with each family of bispectral polynomials. In this talk I will review the state of the art about this problem.

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