Exceptional orthogonal polynomials and isospectral deformations

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Exceptional ortogonal polynomials are solutions of second-order Sturm-Liouville problems. However, unlike their classical counter-parts the families in questions consist of polynomials that are missing a finite number of degrees. I will report on some recent work that allows for the construction of excpetional Jacobi polynomials with an aribtrary number of continuous parameters. These parameters serve as deformation parameters for isospectrally equivalent families of self-adjoint operators. Time permitting, we will describe the role of these new construction in the ongoing classification project for exceptional orthogonal polynomials.

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