University of Crete
Departments of Mathematics and Applied Mathematics

Applied Mathematics Seminar

11:15am, Tuesday, 21 February, 2017
Room A-303

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Exceptional orthogonal polynomials and rational solutions of the Painlevé IV chain

The recently discovered exceptional orthogonal polynomials (X-OP) appear to be intimately related to the structure of closed form exactly solvable quantum potentials. We propose a new scheme which allows to generate in a direct way all the rational solutions of the Painlevé IV and higher order analogues from the X-Hermite family. Specific properties of the associated potentials give then an access to the optimal determinantal representations for these solutions.