

Exceptional Orthogonal Polynomials, KP Wave Functions, and Calogero-Moser Particles

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Surprisingly, the generating functions of Exceptional Hermite Polynomials are wave functions of the KP Hierarchy. Alternatively, this unexpected connection between orthogonal polynomials and soliton theory can be used to write the Exceptional Hermite polynomials in terms of the Lax matrices of an integrable particle system. This talk will review these previously published results and also briefly address ongoing research into why they are true and to what extent they can be generalized. (Joint work with Rob Milson, Maxim Derevyagin, and Luke Paluso.)

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