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Diego Dominici* (dominicd@newpaltz.edu), State University of New York at New Paltz, 1 Hawk Dr., New Paltz, NY 12561. *Asymptotic analysis of recurrence coefficients of "Toda-type" orthogonal polynomials.*

In this talk, we will analyze the three-term recurrence coefficients β_n, γ_n of orthogonal polynomials associated with a perturbed linear functional of the form

$$L[p] = \mathcal{L}[p(x)\kappa(x,z)], \quad p \in \mathbb{F}[x],$$

where $\kappa(x, z)$ is an eigenfunction of a differential operator D_z with eigenvalue x , and \mathbb{F} is the ring of formal power series on the variable z .

The functions $\beta_n(z), \gamma_n(z)$ are solutions of the Toda system

$$D_z \beta_n = \Delta \gamma_n, \quad D_z \ln \gamma_n = \nabla \beta_n,$$

and satisfy discrete Painleve equations in n and nonlinear differential equations in z . (Received July 12, 2019)