

1176-31-46

Vladimir Dragovic*, The University of Texas at Dallas, 800 W Campbell Road, FO 35,
Richardson, TX 75080. *Dynamics of Chebyshev polynomials, isoharmonic deformations, and
constrained Schlesinger systems.*

The talk is based on interrelations between integrable billiards, extremal polynomials, Riemann surfaces, potential theory, and isomonodromic deformations. We discuss injectivity properties of the rotation and winding numbers. We study dynamics of Chebyshev polynomials on several intervals and introduce a notion of isoharmonic deformations. We study their isomonodromic properties and formulate a new class of constrained Schlesinger systems. We provide explicit solutions to these systems. The talk is based on joint results with Vasilisa Shramchenko. (Received January 09, 2022)