



Department of Mathematical Sciences welcomes

Andrei Martinez-Finkelshtein
Baylor University, Texas
University of Almeria, Spain

**An orthogonal polynomials approach to
Ponchelet's theorem, numerical range,
Blaschke products, and beyond...**

ABSTRACT:

For several decades, the relationship between Blaschke products, Ponchelet's Theorem, and numerical ranges of completely non-unitary contractions has been the focus of extensive research. Our goal is to discuss a connection between these topics and the theory of orthogonal polynomials on the unit circle. This recently discovered approach allows to prove several new results, to interpret the existing theory in a new context, and also to discover and understand further connections with other areas of geometry and analysis. This is joint work with Brian Simanek and Barry Simon.

ABOUT THE SPEAKER:

Dr. Martinez-Finkelshtein got his PhD in 1991 from Moscow State University. Currently, he is a Professor of the Department of Statistics and Applied Mathematics of the University of Almeria, Spain, and a Professor of the Department of Mathematics of Baylor University, Texas.

Professor Martinez-Finkelshtein is a world leader in the Approximation Theory and Asymptotic Analysis. Indeed, his research activities cover a wide range of the areas of classical analysis and mathematical physics which include orthogonal polynomials, special functions, random matrices and the potential theory. Professor Martinez-Finkelshtein has made several major contributions to the field. Among his achievements are the uniform asymptotic expansion of the monic polynomials orthogonal on the circle with respect to the Fishers-Hartwig type singular weights, the pioneering study of the non-intersecting squared Bessel paths, and a very well known series of papers on critical measures and quadratic differentials.

November 30, 2018

Hosted by:
Prof. Alexander Its

Tea begins at 2:30
in LD 259

Research Topic
begins at 3:00
in LD 229

