



复旦大学数学科学学院 数学综合报告会

报告题目：**Critical measures, zeros of polynomials and quadratic differentials**

报告人：Guilherme Silva

(University of Michigan)

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摘要： The theory of multiple orthogonal polynomials has gained a lot of attention in the past few years, partially due to its connection to several models of mathematical physics, such as random matrices, non-intersecting paths and planar growth, to mention a few. Motivated towards understanding the zeros of such polynomials in great generality, in this talk we plan to discuss the notion of vector critical measures for a vector logarithmic energy. We obtain several structural results for vector critical measures, in particular showing that they are intimately connected with quadratic differentials on compact Riemann surfaces. Employing techniques on quadratic differentials, we are able to construct families of such critical measures that should ultimately describe the zero distribution for certain classes of multiple orthogonal polynomials.

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上海市现代应用数学重点实验室
复旦大学数学研究所