

WICHITA STATE UNIVERSITY
Department of Mathematics & Statistics

*The Lecture Series in the
Mathematical Sciences Presents Our Guest:*

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“Fatou-Bieberbach domains with large boundaries”

Abstract:

It follows directly from the Riemann Mapping Theorem that there exists no proper subsets of the complex plane that are conformally equivalent to \mathbb{C} . The Riemann Mapping Theorem doesn't hold in higher complex dimensions, for instance, the “ball” and the “disc” are not biholomorphically equivalent. Fatou and Bieberbach showed in the 1920's that there do exist proper subdomains of \mathbb{C}^2 that are biholomorphic to \mathbb{C}^2 , later called Fatou-Bieberbach domains. After Rosay and Rudin showed in the 1980's that every basin of attraction is a Fatou-Bieberbach domain, these domains have been the subject of extensive study. Steniones showed that there exist Fatou-Bieberbach domains with smooth boundaries (and thus Hausdorff dimension 3), and Wolf showed that for any s in the open interval $(3, 4)$, there exists a Fatou-Bieberbach domain whose boundary has Hausdorff dimension s . I will discuss how one might obtain a Fatou-Bieberbach domain whose boundary has dimension 4.

Friday, May 14, 2004
3:00 PM in 372 Jabara Hall

*Please come join us for refreshments before the lecture
at 2:30p.m. in room 353 Jabara Hall.*