FACHBEREICH 10
MATHEMATIK UND INFORMATIK
Prof. Dr. Xiaoyi Jiang
Dekan

28.06.2022

Einladung

zum

Habilitationskolloquium von Dr. Rudolf Zeidler

am

Mittwoch, 13.07.2022, 10:15 Uhr, Hörsaal M 5

Thema des Vortrages:

THE SCHOEN CONJECTURE

In the theory of harmonic maps one often asks for existence and uniqueness of harmonic maps between negatively curved manifolds subject to suitable (boundary) conditions. We focus on the following statement concerning the hyperbolic plane $\mathbb{H}^2$ which was conjectured by Schoen: Every quasisymmetric homeomorphism $u : \partial\mathbb{H}^2 \to \partial\mathbb{H}^2$ admits a unique harmonic quasiconformal extension $f : \mathbb{H}^2 \to \mathbb{H}^2$. While uniqueness (as well as existence in special cases) has been known since the 90's due to work of Li and Tam [2], the general existence statement has only been proved relatively recently by Markovic [4]. Higher dimensional analoga were also established around this time [1; 3].

[1] M. Lemm and V. Markovic. "Heat flows on hyperbolic spaces". In: *J. Differential Geom.* 108.3 (2018), pp. 495–529. DOI: 10.4310/jdg/1519959624.

[2] P. Li and L.-F. Tam. "Uniqueness and regularity of proper harmonic maps". In: *Ann. of Math. (2)* 137.1 (1993), pp. 167–201. DOI: 10.2307/2946622.

[3] V. Markovic. "Harmonic maps between 3-dimensional hyperbolic spaces". In: *Invent. Math.* 199.3 (2015), pp. 921–951. DOI: 10.1007/s00222-014-0536-x.

[4] V. Markovic. "Harmonic maps and the Schoen conjecture". In: *J. Amer. Math. Soc.* 30.3 (2017), pp. 799–817. DOI: 10.1090/jams/881.

Hierzu sind alle Mitglieder des Fachbereichs herzlich eingeladen.

gez. Xiaoyi Jiang, Dekan

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