



*Institute of Mathematical Research
Department of Mathematics*

GEOMETRY SEMINAR

Explicit constructions of Strebel differentials via Belyi maps and Dessins

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Abstract

The theory of quadratic differentials plays a central role in the study of Teichmüller theory. The existence and uniqueness theorem for quadratic differentials with prescribed “residue” at prescribed points on a compact Riemann surface were first obtained by K. Strebel. All results about Strebel differentials are pure existence theorems, and there are very few explicit constructions of such differentials. In this talk, I will give some non-trivial concrete examples of Strebel differentials with 4 double poles on Riemann sphere. In addition, I will give all the metric ribbon graphs correspond to these differentials. The main tool we used is Belyi maps and dessins d’enfants.

Date: March 24, 2016 (Thursday)

Time: 4:00 – 5:00pm

Place: Room 210, Run Run Shaw Bldg., HKU