THE UNIVERSITY   **OF HONG KONG**

Institute of Mathematical Research
Department of Mathematics

Geometry Seminar

Using the Schottky-Klein prime function to solve free boundary problems in multiply connected domains

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Date: July 10, 2013 (Wednesday)

Time: 2:00 – 3:00pm

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

Abstract

The Schottky-Klein prime function is a special transcendental function which plays a central role in problems involving multiply connected domains. This function can be used to great advantage in many varied applications. We shall first introduce the Schottky-Klein prime function and outline a novel numerical method which we have recently derived to rapidly and accurately compute it. We will then explore two different free boundary problems (arising in fluid mechanics) defined over two distinct multiply connected geometries. For both problems, we will show that it has been expedient to employ the Schottky-Klein prime function and its associated function theory in order to construct analytical solutions.

All are welcome