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Seminar

Holomorphic quadratic differentials on graphs

Prof. Wayne Wai Yeung LAM
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Abstract

In the classical theory, holomorphic quadratic differentials on Riemann surfaces are tied to a wide range of objects, e.g. harmonic functions, Teichmueller space, dynamical systems and minimal surfaces. We present a discretization of holomorphic quadratic differentials that preserves such a rich theory.

We introduce discrete holomorphic quadratic differentials with various examples. On one hand, they arise from circle packings and discrete harmonic functions on graphs. On the other hand, they induce naturally a notion of discrete minimal surfaces. These correspondences to discrete conformal geometry and to the surface theory will be discussed in the talk. In the end, we relate discrete holomorphic quadratic differentials to Teichmueller theory in hyperbolic geometry.

This talk aims at an introduction to Discrete Differential Geometry — structure-preserving discretization in differential geometry, which has led to applications in computer graphics and computational architecture in recent years.

Date: 19 February 2019 (Tuesday)
Time: 10:00am – 11:00am
Venue: Room 222, Lady Shaw Building,
The Chinese University of Hong Kong, Shatin

All are Welcome