



De: CRM crm@crm.umontreal.ca
Objet: ***AUJOURD'HUI*** / CSMQ-Montréal : Nathanael Berestycki
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COLLOQUE DES SCIENCES MATHÉMATIQUES DU QUÉBEC-Montréal
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DATE :
Le vendredi 8 avril 2016 / Friday, April 8, 2016

HEURE / TIME :
16 h / 4:00 p.m.

CONFERENCIER(S) / SPEAKER(S) :
Nathanael Berestycki (University of Cambridge)

TITRE / TITLE :
The dimer model: universality and conformal invariance

LIEU / PLACE :
CRM, UdeM, Pav. André-Aisenstadt, 2920, ch. de la Tour, salle 6214

RESUME / ABSTRACT :
The dimer model on a finite bipartite planar graph is a uniformly chosen set of edges which cover every vertex exactly once. It is a classical model of statistical mechanics, going back to work of Kasteleyn and Temperley/Fisher in the 1960s who computed its partition function.

After giving an overview, I will discuss some recent joint work with Benoit Laslier and Gourab Ray, where we prove in a variety of situations that when the mesh size tends to 0 the fluctuations are described by a universal and conformally invariant limit known as the Gaussian free field.

A key novelty in our approach is that the exact solvability of the model plays only a minor role. Instead, we rely on a connection to imaginary geometry, where Schramm-Loewner Evolution curves are viewed as flow lines of an underlying Gaussian free field.

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