

COLLOQUE DES SCIENCES MATHÉMATIQUES DU QUÉBEC
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DATE :

Le vendredi 24 novembre 2017 / Friday, November 24, 2017

HEURE / TIME :

16 h / 4:00 p.m.

CONFÉRENCIER(S) / SPEAKER(S) :

Stanislav Smirnov

(University of Geneva & Skolkovo Institute of Science and Technology)

TITRE / TITLE :

Complex analysis and 2D statistical physics

LIEU / PLACE :

CRM, Université de Montréal, Pavillon André-Aisenstadt, salle 6254

RESUME / ABSTRACT :

Over the last decades, there was much progress in understanding 2D lattice models of critical phenomena. It started with several theories, developed by physicists. Most notably, Conformal Field Theory led to spectacular predictions for 2D lattice models: e.g., critical percolation cluster a.s. has Hausdorff dimension $91/48$, while the number of self-avoiding length N walks on the hexagonal lattice grows like $(\sqrt{2+\sqrt{2}})^N N^{11/32}$. While the algebraic framework of CFT is rather solid, rigorous arguments relating it to lattice models were lacking. More recently, mathematical approaches were developed, allowing not only for rigorous proofs of many such results, but also for new physical intuition. We will discuss some of the applications of complex analysis to the study of 2D lattice models.

Responsables :

Olivier Collin (UQÀM)

Henri Darmon (Université McGill)

Dimitris Koukoulopoulos (Université de Montréal)

Iosif Polterovich (Université de Montréal)

David Stephens (Université McGill)

Hugh Thomas (UQÀM)

Yi Yang (Université McGill)
