



De: CRM crm@crm.umontreal.ca
Objet: ***AUJOURD'HUI*** : CSMQ (McGill University) / Gennady Samorodnitsky
Date: 10 mars 2016 11:00
À: activites@CRM.UMontreal.CA

COLLOQUE DES SCIENCES MATHÉMATIQUES DU QUÉBEC - Montréal
<http://www.crm.umontreal.ca/Colloques/index.html>

DATE :
Le jeudi 10 mars 2016 / Thursday, March 10, 2016

HEURE / TIME :
15 h 30 / 3:30 p.m.

CONFERENCIER(S) / SPEAKER(S) :
Gennady Samorodnitsky (Cornell University)

TITRE / TITLE :
Ridges and valleys in the high excursion sets of Gaussian random fields

LIEU / PLACE :
McGill University, Maass building, salle MAASS 217

RESUME / ABSTRACT :
It is well known that normal random variables do not like taking large values. Therefore, a continuous Gaussian random field on a compact set does not like exceeding a large level. If it does exceed a large level at some point, it tends to go back below the level a short distance away from that point. One, therefore, does not expect the excursion set above a high for such a field to possess any interesting structure. Nonetheless, if we want to know how likely are two points in such an excursion set to be connected by a path ("a ridge") in the excursion set, how do we figure that out? If we know that a ridge in the excursion set exists (e.g. the field is above a high level on the surface of a sphere), how likely is there to be also a valley (e.g. the field going to below a fraction of the level somewhere inside that sphere)?

We use the large deviation approach. Some surprising results (and pictures) are obtained.

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