



**De:** CRM CRM@CRM.UMontreal.CA  
**Objet:** Série de conférences Chaire Aisenstadt - Nikita Nekrasov (IHES / SCGP)  
**Date:** 14 septembre 2015 09:43  
**À:** activites@crm.umontreal.ca

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CHAIRE AISENSTADT CHAIR 2015  
 Centre de recherches mathématiques  
 Série de conférences / Series of lectures

Semestre thématique du CRM  
 Correspondance AdS/CFT, holographie, intégrabilité

CRM Thematic Semester  
 AdS/CFT, Holography, Integrability

Nikita Nekrasov (IHÉS / Simons Center for Geometry and Physics)

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"BPS/CFT correspondence"

The non-perturbative quantum field theory and string theory is a source of deep connections between different branches of mathematics and physics. In these lectures I will focus on the correspondence between the generating functions of instanton invariants, the integrals over the moduli spaces of instantons in Yang-Mills theory in four dimensions, and the conformal blocks of two dimensional conformal field theories. The BPS/CFT correspondence was conjectured around 2002-2004 based on several examples, which kept coming up. The celebrated AGT conjecture (2009) is a particular example, where both sides of the BPS/CFT correspondence are well-known, but the connection is surprising. In the lectures I will present the new tool for proving these conjectures, the moduli space of crossed instantons. In a particular corner of the parameter space the BPS/CFT correspondence becomes the Bethe/gauge correspondence, relating quantum integrable systems and supersymmetric gauge theories. The lectures will report on the latest achievements in this field.

CRM, Pavillon André-Aisenstadt, Université de Montréal, Salle / Room 6254

Lundi, 14 septembre / Monday, September 14  
 Première partie / Part 1  
 16h00 / 4:00 pm

Mardi 15 septembre / Tuesday, September 15  
 Seconde partie / Part 2  
 14:30 / 2:30 pm

Mercredi 16 septembre / Wednesday, September 16  
 Troisième partie / Part 3  
 16h00 / 4:00 pm

Jeudi 17 septembre / Thursday, September 17  
 Quatrième partie / Part 4  
 14:30 / 2:30 pm

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Conférence s'adressant à un large auditoire / Suitable for a general audience  
 Vendredi 18 septembre 2015, 16h00 / Friday, September 18, 2015, 4:00 pm

Centre de recherches mathématiques  
 Pavillon André-Aisenstadt, Université de Montréal  
 Salle / Room 6254

"Gauge theories and integrable systems"

Une réception suivra la conférence au Salon Maurice-L'Abbé, Pavillon André-Aisenstadt (Salle 6245)

A reception will follow at the Salon Maurice-L'Abbé, Pavillon André-Aisenstadt (Room 6245)

Acceptance will follow at the Salem Institute, 2700, Pavilion Place, Rochester (Room 0240).

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<http://www.crm.math.ca/Nekrasov>

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