SEMPARIS – Séminaires en région parisienne

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Workshop or Conference

Jeudi 17 Août 2017, 11 :00
LPTENS, Room Conf. IV(Workshop on "Exceptional and ubiquitous Painlevé equations for Physics". Please see webpage https ://indico.in2p3.fr/event/14720/)
Domaines : math

Titre : *Moduli spaces of connections and Higgs bundles over curves and Geometric Theory of equations of Painlevé type.*

Orateur : **Masa-Hiko Saito (University of Kobe)**

Résumé : *Geometric theory of equations of Painlevé type are based on moduli spaces of stable parabolic connections on a family of smooth projective curves of arbitrary genus. We will start with algebraic constructions of moduli spaces of parabolic connections and singular parabolic Higgs bundles on a smooth projective curve. Riemann-Hilbert correspondence from a family of moduli spaces of singular connections to the corresponding moduli spaces of (generalized) monodromy data induces the isomonodromic differential equations. An analysis of RH correspondence shows the geometric Painlevé property of isomonodromic differential equations associated to each type of singular connections. Next, I will investigate explicit geometric structures of moduli spaces of parabolic connections and Higgs bundles. On a Zariski dense open set of each moduli space one can define a canonical coordinate system associated to apparent singularities and their duals. The spectral curves for Higgs bundles play essential roles for this explicit geometry. If time permits, we will explain more geometric structures of moduli spaces.*