

SEMPARIS – Séminaires en région parisienne

<http://string.lpthe.jussieu.fr/semparis/>

Workshop or Conference

Vendredi 18 Août 2017, 09 :30

LPTENS, Salle Conf. IV (Workshop on "Exceptional and ubiquitous Painlevé equations for Physics". Please see webpage <https://indico.in2p3.fr/event/14720/>)

Domaines : math-ph

Titre : *Asymptotic methods for the analysis of Painlevé equations*

Orateur : **Ovidiu Costin (Ohio State University)**

Résumé : *We present new resurgence based methods for the global analysis of problems in mathematics, and models in physics such as QFT and string theory. The starting point can simply be a perturbative expansion. This approach is particularly well suited for finding the "large-to-small coupling" connection and for calculating the monodromy at infinity. Applied to the Painlevé P1 equation, the Stokes constant is obtained in closed form simply from the Painlevé property (all movable singularities are poles); the small argument behavior of the tritronquée solution is derived from its asymptotic behavior, a crucial ingredient we used for proving of Dubrovin's conjecture. We devise convergent rational function expansions for the tritronquée which are practical, efficient and accurate throughout its domain of analyticity sought by the Painlevé program initiated by Deift & al. Work with G. Dunne, M. Huang and S. Tanveer*
