

## Some analytical aspects of the Kontsevich matrix model

*Friday, June 9, 2017 11:20 AM (40 minutes)*

In this seminar I will show that the Kontsevich integral on  $n \times n$  matrices ( $n < \infty$ ) is the isomonodromic tau function associated to a  $2 \times 2$  Riemann–Hilbert problem. This approach allows us to gain control of the analysis of the convergence as  $n \rightarrow \infty$ . By an appropriate choice of the external source matrix in Kontsevich's integral, I'll show that the limit produces the isomonodromic tau function of a special tronquée solution of the first Painlevé hierarchy, and I will identify the solution in terms of the Stokes' data of the associated linear problem. Time permitting I will address the problem of universality for the Kontsevich matrix model. This is a joint work with M. Bertola.

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