
VINCENT BOUCHARD, University of Alberta
Quantization and Topological Recursion

The Eynard-Orantin topological recursion appears in a wide variety of geometric contexts, from Gromov-Witten theory to knot theory. From the data of a spectral curve, it reconstructs recursively generating functions for appropriate enumerative invariants. The ubiquity of this recursive structure can be understood in terms of quantization. From the topological recursion, one can construct a wave-function, which is then conjectured to be annihilated by a differential operator that is a quantization of the spectral curve. In this talk I will give an overview of the conjectural relation between topological recursion and quantization, highlighting its foundations in terms of tau functions and variational formulae. I will also present a recent theorem that proves the conjecture for a large class of genus zero spectral curves, and briefly mention recent results on higher genus spectral curves. This is based on joint work with N.K. Chidambaram, T. Dauphinee and B. Eynard.