**Generalised Kontsevich graphs, r-spin intersection numbers and topological recursion**

In 1990, Witten formulated his celebrated conjecture that predicts that the generating series of intersection numbers of psi-classes is a tau function of the KdV hierarchy. Kontsevich gave the first proof of this conjecture making use of a cell decomposition of a combinatorial model of the moduli space of curves by means of certain ribbon graphs which are Feynman graphs of a cubic hermitian matrix model with an external field. Together with Raphaël Belliard, Séverin Charbonnier and Bertrand Eynard, we studied certain generalisations of these graphs and showed that they satisfy a Tutte recursion. This implies a combinatorial interpretation of universal expressions that we transform into loop equations for a large class of spectral curves. I will show how we arrived to the topological recursion statement for this model and how we related a particular instance of it to intersection numbers with Witten’s r-spin class, deducing also that r-spin intersection numbers can be computed by higher topological recursion. I will finish with comments on further consequences of our work that we would like to explore in the future.