Théories de jauge, monopoles, espaces de modules et systèmes intégrables
« Une conférence en l'honneur de Jacques Hurtubise, à l'occasion de son 60e anniversaire »
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Gauge theories, Monopoles, Moduli Spaces and Integrable Systems
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Weighted Hurwitz Numbers and Topological Recursion

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The family of KP or 2D-Toda tau functions of hypergeometric type associated to a weight generating function serve as generating functions for weighted Hurwitz numbers, giving weighted enumerations of branched covers of the Riemann sphere with specified ramification profiles. Polynomial weight generating functions have an associated family of spectral curves that are rational. The corresponding quantum spectral curves are families of ODE's with rational coefficients satisfied by the Baker function. The WKB series for the Baker function leads to a sequence of recursion relations between the weighted Hurwitz numbers, fitting within the general framework of the Topological Recursion program.

This is joint work with A. Alexandrov, G. Chapuy and B. Eynard.

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