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Voros coefficients and the topological recursion for the hypergeometric differential equations

In this talk, we prove that the Voros coefficients for hypergeometric differential equations are described by the generating functions of free energies defined in terms of Eynard-Orantin's topological recursion. Furthermore, as its applications we show the following objects can be explicitly computed for hypergeometric equations: (i) three-term difference equations that the generating function of free energies satisfies, (ii) explicit form of the free energies, and (iii) explicit form of Voros coefficients ([1, 2]).

References

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[2] Takei, Y.-M., Voros Coefficients and the Topological Recursion for a Class of the Hypergeometric Differential Equations associated with the Degeneration of the 2- dimensional Garnier System, arXiv: 2005.08957.