

W -algebras and higher Airy structures

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The notion of Airy structures was recently introduced by Kontsevich and Soibelman as an abstract quantization framework underlying the Eynard-Orantin topological recursion. In this talk I will review the construction of Airy structures, and define “higher Airy structures”, whereby quadratic differential operators are replaced by higher order differential operators. I will show that twisted modules for $W(A_n)$ -algebras provide an example of higher Airy structures, and in fact can be used to reconstruct the correlation functions obtained from the generalized topological recursion on spectral curves with higher ramification.

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