

On the BGW tau function

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One of the best studied KdV tau-functions is the so-called Kontsevich–Witten tau-function. In 1990, Witten conjectured that this tau-function has an algebro-geometric interpretation as the generating function of psi-class intersections on the moduli space of curves. This conjecture was proved in 1991 by Kontsevich using matrix-model techniques. Another very well-known tau function (studied since the 90s) is the Brezin–Gross–Witten tau-function and it exhibits many properties analogous to the Kontsevich–Witten tau function. Up until recently however, the BGW tau function lacked an algebro-geometric interpretation. In 2017, Norbury conjectured that this tau-function is the descendant potential of a certain CohFT called the Theta class. In this talk, I'll explain the construction and properties of the Theta and talk about a proof of Norbury's conjecture. This is based on joint work with E. Garcia-Falde and A. Giacchetto.

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