

Intersections of Topological Recursion, Conformal Field Theory, and Random Geometry



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Fool's crowns, Schwarzian, and topological recursion.

For a Riemann surface with holes, we propose a variant of the action on a circumference- P boundary component with n bordered cusps attached (a “fool’s crown”) that is decoration-independent and generates finite volumes V crown of the corresponding moduli spaces when integrated against the volume n, P form obtained by inverting the Fenchel–Nielsen (Goldman) Poisson bracket on a set of decoration-independent combinations of Penner’s λ lengths. In the limit as $n \rightarrow \infty$, the integrals transform into a functional integral with the measure containing the Schwarzian and reproducing the measure by Stanford–Witten and Alekseev–Meinrenken. I will discuss hypothetical links to topological recursion systems and the volumes of moduli spaces for a disc with n bordered cusps. Based on arXiv.2411.03913.