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**Jonathan Novak\*** ([jnovak@math.mit.edu](mailto:jnovak@math.mit.edu)), 77 Massachusetts Avenue, Boston, MA 02139. *From Kontsevich-Witten to (monotone) Hurwitz via HCIZ.*

The Kontsevich-Witten theorem asserts that two different approaches to 2D gravity are equivalent. The first approach involves the asymptotic analysis of random matrix partition functions, while the second involves intersection theory in moduli spaces of Riemann surfaces. The intersection theory approach can be reduced to a problem about counting walks on the Cayley graphs of the symmetric groups. Quite remarkably, a desymmetrized version of this enumeration problem turns out to be the basic structure underlying the asymptotics of spherical (HCIZ) integrals, which are just Schur functions in disguise. We will discuss two approaches to rigorously constructing the asymptotics of spherical integrals: one using complex analysis and self-interacting random walks on symmetric groups, and the other using loop equations and concentration of measure. Discussion of the first approach is based on joint work with M. Guay-Paquet and I. Goulden, while discussion of the second approach is based on joint work with A. Guionnet. (Received September 12, 2013)