

SU(r) Vafa-Witten Invariants and Continued Fractions

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This is joint work with Martijn Kool and Thies Laarakker.

We conjecture a formula for the structure of SU(r) Vafa-Witten invariants of surfaces with a canonical curve, generalizing a similar formula proven by Laarakker for the monopole contribution. This expresses the Vafa-Witten invariants in terms of some universal power series and Seiberg-Witten invariants. Using computations on nested Hilbert schemes we conjecturally determine these universal power series for r at most 5 in terms of theta functions for the A_{r-1} lattice and Ramanujan's continued fractions.

Summary

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