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Gromov-Witten invariants of symplectic toric manifolds

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ABSTRACT

We apply Graber and Pandharipande's localisation formula for virtual classes (cf. [1]) to the moduli stack of stable maps into symplectic toric manifolds with the natural torus action. The analysis of the local data yields an explicit formula for the Gromov–Witten invariants of any (smooth) symplectic toric manifold, without any assumptions such as convexity, Fano or weak monotonicity. In some cases, these invariants yield enumerative data, but in general they are symplectic invariants thus providing information about the symplectic topology of the manifold. Gromov–Witten invariants also enter as correlation functions into quantum cohomology.

We also give some applications of our result.

References

[1] T. Graber and R. Pandharipande. Localization of virtual classes. *Invent. math.* 135 (1999), p. 487–518.

[2] H. Spielberg. The Gromov–Witten invariants of symplectic toric manifolds, and their quantum cohomology ring. *C. R. Acad. Sci. Paris*, Série I, 329 (1999), p. 699–704.

[3] H. Spielberg. *A formula for the Gromov–Witten invariants of toric varieties*. IRMA preprint 1999/11.

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