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Real Gromov-Witten Invariants on the Moduli Space of Genus 0 Stable Maps to a Smooth Rational Projective Space

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**Abstract:** We characterize transversality, non-transversality properties on the moduli space of genus 0 stable maps to a rational projective surface. If a target space is equipped with a real structure, i.e, anti-holomorphic involution, then the results have real enumerative applications. Firstly, we can define a real version of Gromov-Witten invariants. Secondly, we can prove the invariance of Welschinger's invariant in algebraic geometric category.

**Key Words:** Gromov-Witten invariant, enumerative invariant, transversality, intersection multiplicity, real structure

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