The authors have studied Welschinger invariants of real toric Del Pezzo surfaces using tropical methods and a Caporaso-Harris degeneration technique [I. Itenberg et al., Comment. Math. Helv. 84, No. 1, 87–126 (2009; Zbl 1184.14092)]. In this work, they consider non-toric Del Pezzo surfaces. Since tropical methods are in principle limited to the toric situation, they have to find a way to overcome this problem. They still rely on tropical methods by blowing down exceptional divisors and carefully studying the relation of the curves to count. The authors derive interesting applications, e.g., results about the asymptotic behaviour of Welschinger invariants when compared to Gromov-Witten invariants.

Reviewer: Hannah Markwig (Göttingen)

MSC:
14N10 Enumerative problems (combinatorial problems) in algebraic geometry
14P05 Real algebraic sets
14T05 Tropical geometry (MSC2010)
14N35 Gromov-Witten invariants, quantum cohomology, Gopakumar-Vafa invariants, Donaldson-Thomas invariants (algebraic-geometric aspects)

Keywords:
tropical curves; real rational curves; enumerative geometry; Welschinger invariants; Caporaso-Harris formula

Full Text: DOI arXiv

References:


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