

## Effective Pila–Wilkie bounds for Pfaffian sets

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A great many applications of o-minimality to diophantine geometry have arisen from the celebrated counting theorem of Pila and Wilkie, which provides a bound on the number of rational points of bounded height lying on sets definable in o-minimal expansions of the real field. The proof of the Pila–Wilkie Theorem does not, however, provide an effective bound, and the pursuit of this (in particular instances), motivated by the goal of improving some diophantine applications, remains very active. I will discuss some ongoing joint work, still in progress (with Gal Binyamini, Gareth O. Jones and Harry Schmidt), in which we obtain effective forms of the Pila–Wilkie Theorem for sets definable in various structures described by Pfaffian functions, as well as a number of effective diophantine applications of these results. I will focus on the counting result; for effective applications, please see Gareth O. Jones' talk!