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Abstracts of Short Communications and Posters

Section:

3. Number Theory and Arithmetic Algebraic Geometry

1991 MS Classification: 11, 12

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Polynomials vanishing at 1 with high multiplicity and Tarry's problem

Let $P(z)$ be a polynomial with integer coefficients having relatively low height and vanishing at 1 with high multiplicity. There are both an existence proof and several explicit constructions of such polynomials. These proved to be useful in estimating the difference between an algebraic number and unity from below in terms of deg P and the Mahler measure of P. On the other hand, the polynomial $P(z)$ was used in order to construct algebraic numbers close to 1 and having small Weil's height. Applications of the Prouhet-Tarry-Escott problem will be discussed.