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Kiryl I Tsishchanka* (ktsishch@depaul.edu), DePaul University, Department of Mathematical Sciences, 2320 North Kenmore Ave., Chicago, IL 60614. *On integer quadratic polynomials which are small at a given point.* Preliminary report.

It is known that every best Diophantine approximation to a real number ξ is a convergent of the continued fraction expansion of ξ . Moreover, the continued fraction of ξ is periodic if and only if ξ is quadratic. Hermite wanted a generalization of this property to higher degree algebraic numbers. Let ξ be a cubic irrational. In this talk we will discuss two-dimensional simultaneous Diophantine approximations to ξ and some properties of quadratic polynomials with integer coefficients which are small at ξ . (Received September 27, 2006)