1086-11-124 **Anna Haensch*** (ahaensch@wesleyan.edu), Department of Mathematics and C.S., 265 Church St., Middletown, CT 06459. *Almost universal ternary sums of squares and* $(2p+2)$*-gonal numbers.*

A fundamental question in the study of integral quadratic forms is the representation problem which asks for an effective determination of the set of integers represented by a given quadratic form. A related and equally interesting problem is the representation of integers by inhomogeneous quadratic polynomials. Weighted sums of generalized m-gonal numbers, defined by $P_m(x) = \frac{(m-2)x^2-(m-4)x}{2}$ for $x \in \mathbb{Z}$, give rise to an interesting family of inhomogeneous quadratic polynomials. Consider the polynomial

$$H(x, y, z) = \alpha P_\ell(x) + \beta P_m(y) + \gamma P_n(z)$$

with $\alpha, \beta, \gamma \in \mathbb{Z}^+$ and $\ell, m, n \in \{4, 2p+2\}$ for p prime. We say that H is *almost universal* if it represents all but finitely many positive integers. Relying on the theory of quadratic lattices and primitive spinor exceptions, we give a list of necessary and sufficient conditions on α, β and γ, under which H is almost universal. These results can be extended to more general statements about almost universal inhomogeneous quadratic polynomials, under some mild arithmetic conditions.

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