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Lenny Fukshansky* (lenny@cmc.edu), 850 Columbia Avenue, Department of Mathematics,
Claremont McKenna College, Claremont, CA 91711. *Solving systems of quadratic equations over*
 $\overline{\mathbb{Q}}$.

We prove the existence of a nontrivial small-height zero of a system of k quadratic forms in an ℓ -dimensional subspace of $\overline{\mathbb{Q}}^n$, $n \geq \ell \geq \frac{k(k+1)}{2}$. Further, assuming a system of one or two inhomogeneous quadratic polynomials and m inhomogeneous linear polynomials in $n \geq m + 4$ variables has a nontrivial common zero over $\overline{\mathbb{Q}}$, we prove the existence of such a zero of bounded height. Our investigation extends previous results on small zeros of quadratic forms, including Cassels' theorem and its various generalizations and contributes to the literature of so-called "absolute" Diophantine results with respect to height. All bounds on height are explicit. (Received July 12, 2017)