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The Hasse principle for diagonal forms restricted to lower-degree hypersurfaces

We seek upper bounds on the number of variables required to establish an analytic Hasse principle for systems consisting of one diagonal form of degree k and one general form of degree $d < k$. By employing a hybrid method that combines ideas from the study of general forms with techniques adapted to the diagonal case, we establish bounds that are exponential in d but only quadratic in k , thus capturing the growth rates typically obtained for both problems separately. This is joint work with Julia Brandes.