
PAOLO MANTERO, University of California at Riverside

On a conjecture by G. V. Chudnovsky

A long-standing conjecture of G. V. Chudnovsky predicts lower bounds for the minimal degree of a hypersurface passing through a set of n fixed (simple distinct) points in the projective space \mathbb{P}^N with multiplicity m . Except for \mathbb{P}^2 and \mathbb{P}^3 , the conjecture is wide-open, and so far the best lower bound for $N > 3$ was proved by Esnault-Viehweg in 1983. Chudnovsky's conjecture is implied by a recent (wide-open) conjecture posed by Harbourne and Huneke about inclusions between symbolic and ordinary powers of ideals.

In this talk, based on joint work with L. Fouli and Y. Xie, we prove Chudnovsky's conjecture for "most" sets of n points in \mathbb{P}^N .