1117-13-203 **Louiza Fouli**, **Paolo Mantero\*** (`pmantero@uark.edu`) and **Yu Xie**. *On a conjecture by G. V. Chudnovsky.* Preliminary report.

A long-standing conjecture of G. V. Chudnovsky predicts lower bounds for the minimal degree of a hypersurface passing with multiplicity $m$ through a set of $n$ fixed (simple) points in $\mathbb{P}^N_{\mathbb{C}}$. The conjectured bounds have been proved for any sets of points in $\mathbb{P}^2$ and for sets of generic points in $\mathbb{P}^3$. So far, the best lower bound for $N > 3$ was proved by Esnault-Viehweg in 1983 (using methods from Complex Geometry). In 2011 Harbourne and Huneke posed a suggestive conjecture (wide-open for $\mathbb{P}^N$ with $N > 3$) on inclusions between symbolic and ordinary powers of ideals, which would imply Chudnovsky's conjecture.

In this talk we prove Chudnovsky's conjecture for very general points in $\mathbb{P}^N$ and Harbourne-Huneke conjecture for sets of very general points of certain cardinality. (Received January 13, 2016)