1041-14-207   **Verschelde Jan*** (`jan@math.uic.edu`), University of Illinois at Chicago, Dept of Math, Stat, and CS, 851 S. Morgan St. (m/c 249), Chicago, IL 60607-7045. *Polyhedral Methods for Algebraic Curves.* Preliminary report.

Many polynomial systems arising in practical applications have positive dimensional solution sets. A certificate for a polynomial system to have an algebraic curve as a solution consists of a tropism, a root at infinity, and a second term in the Puiseux series expansion of the curve at that root at infinity. Methods for computing such certificates are polyhedral because the systems capturing the roots at infinity are supported on faces of the Newton polytopes. We report on preliminary implementations of these methods in the software PHCpack. (Received August 11, 2008)

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