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Jan Verschelde* (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. *Searching for Solution Curves of Polynomial Systems.*

A polynomial system with as many equations as unknowns is expected to have only isolated solutions. In the exceptional case of a solution curve we propose to develop the solution curve starting at infinity. A tropism defines the leading powers of this Puiseux series development of a solution curve. Computing these tropisms along with the coefficients of the Puiseux series leads to a polyhedral method for solution curves of polynomial systems. (Received March 02, 2009)