1064-65-109 **Danko Adrovic** (adrovic@math.uic.edu), University of Illinois at Chicago, Dept of Math, Stat & CS (m/c 249), 851 S. Morgan Street, Chicago, IL 60607-7045, and **Jan Verschelde*** (jan@math.uic.edu), University of Illinois at Chicago, Dept of Math, Stat & CS (m/c 249), 851 S. Morgan Street, Chicago, IL 60607-7045. *Developing Solution Sets with Polyhedral Methods.* Preliminary report.

Numerical algebraic geometry has given us tools to manipulate positive dimensional solution sets of polynomial systems. Paths defined by polyhedral homotopies originate at the first coefficient of a Puiseux series expansion. Recently we extended this polyhedral approach to a preprocessing algorithm to compute common factors of two polynomials. This approach is promising to exploit permutation symmetry: initial form systems in the same orbit are solved only once. Developing polyhedral algorithms for more than one dimensional solution sets gives insight in the structure of the pretropical variety. We illustrate our developments with computational results on benchmark problems. (Received September 01, 2010)