1030-65-128 **Chih-Hsiung Tsai*** (tsaichih@msu.edu), Wells Hall A534, Michigan State University, E.Lansing, MI 48824. *NHOM4PSpara - Parallel Implementation of the Polyhedral Homotopy Continuation Method for Polynomial Systems.*

The polyhedral homotopy continuation method has been largely employed as an efficient way of solving polynomial systems. The NHOM4PS is a new software package that updates the older version of HOM4PS and finds all isolated solutions of polynomial systems by employing three key techniques: (1) new method for finding mixed cells; (2) tracing all the solution curves of combined polyhedral-linear homotopy; and (3) checking the possible curve jumping. NHO4PSpara parallelizes NHOM4PS to solve large scale systems. In this talk, we will present numerical results including some systems that were not solved before within tolerable time. (Received July 27, 2007)