1077-90-1809 **Jesus A. De Loera**, **Amitabh Basu** and **Mark Junod*** (`mjunod@math.ucdavis.edu`).
Numerical Experiments on New Relaxation-Type Algorithms for LPs.

In early 2011, Sergei Chubanov introduced a new algorithm for linear programming. The algorithm, based on the famous relaxation method first introduced by Motzkin and Schoenberg, and Agmon in 1951, either determines a feasible point of the system or correctly decides no integer solutions exist. Based on this Chubanov gave a new polynomial time algorithm for general LPs. Our paper discusses computer implementations of (1) a simplified version of Chubanov's new algorithm, and (2) his original version, and also runs a series of numerical experiments in order to determine if this algorithm provides us with a new, practically efficient methods of solving linear programs. Our simplified version is a pure feasibility algorithm, i.e. either a point is found or the system is determined to be infeasible, and nothing about integer solutions is determined. We then look at applications to integer programming. (Received September 21, 2011)