1114-46-183 **Xiaorong Liu*** (`xiaorong.liu@colorado.edu`). *Existence and uniqueness of solutions of linear sparse matrix equations via a fixed point theorem.*

In this paper we prove several generalizations and applications of the Banach fixed point theorem for the complete metric spaces. This theorem is used to prove the existence and uniqueness of solutions of the linear sparse matrix problem considered. (Received August 26, 2015)