1133-62-318 **Pawan Kumar Gupta*** (gupta.pawan@knights.ucf.edu), APT 201, 3142 Alafaya Club Drive, Orlando, FL 32817, and **Marianna Pensky** (marianna.pensky@ucf.edu), Department of Mathematics, University of Central florida, Orlando, FL 32816. *Solution of linear ill-posed problems using random dictionaries.*

In the present paper we consider application of overcomplete dictionaries to solution of general ill-posed linear inverse problems. In the context of regression problems, there has been enormous amount of effort to recover an unknown function using such dictionaries. One of the most popular methods, lasso and its versions, is based on minimizing empirical likelihood and unfortunately, requires stringent assumptions on the dictionary, the, so called, compatibility conditions. Though compatibility conditions are hard to satisfy, it is well known that this can be accomplished by using random dictionaries. In the present paper, we show how one can apply random dictionaries to solution of ill-posed linear inverse problems. We put a theoretical foundation under the suggested methodology and study its performance via simulations. (Received July 31, 2017)