1145-62-242 **Rasika Udara Rajapakshage*** (udara@knights.ucf.edu), 12005, solon dr ,apt 206, Orlando, FL 32826, and **Marianna Pensky** (marianna.pensky@ucf.edu), 4393 Andromeda Loop N, Orlando, FL 32816. *Clustering in Statistical Inverse Problems.*

In this paper, we consider the solution of a set of general ill-posed linear inverse problems $Af_m = q_m$, $m = 1, \cdots, M$, where A is a bounded linear operator that does not have a bounded inverse and the right-hand sides q_m are measured with error. In particular, we assume that some of the curves f_m and, hence, q_m are very similar to each other, so that they can averaged and recovered together. As a result, one supposedly obtains estimators of f_j with smaller errors. The grouping is usually unknown (as well as the number of groups) and is carried out at the pre-processing step applying one of the standard clustering techniques with the number of clusters determined by trial and error. Subsequently, the curves in the same cluster are averaged and the errors of those aggregated curves are used as true errors in the analysis. Problems of this kind appear in many areas of application such as medical imaging (tomography, dynamic contrast enhanced Computerized Tomography and Magnetic Resonance Imaging) and many others where similar curves are measured and can be recovered together. While in many of the applications, the main objective is clustering, we are not interested in the errors in group assignments and use clustering merely as a denoising technique. (Received August 23, 2018)