1133-68-205 **Maryam Jaberi*** (mjaberi@cs.ucf.edu), **Marianna Pensky** (marianna.pensky@ucf.edu) and **Hassan Foroosh** (foroosh@cs.ucf.edu). *PROBABILISTIC SUBSPACE CLUSTERING.*

Subspace clustering algorithms are designed to discover separate clusters in a mixture of high dimensional vectors drawn from multiple probability distributions. When a subset of high dimensional data belongs to one cluster, then all those points lie near a low dimensional subspace. Therefore, each subspace can be represented in a lower dimensional subspace. Existing methods have been focused on solving this problem through two steps: computing an affinity matrix and finding clusters. The drawback of these methods is that the results are final and cannot be improved. Therefore, there is an incentive to combine the two steps into an iterative algorithm. In this work, we propose an iterative method that (i) delays association of points to subspace clusters by updating an association matrix in each iteration, defined in terms of membership probabilities. In particular, at each iteration, points are divided into two groups of "certain" and "uncertain", with the assignment of the latter group delayed until their subspace association certainty improves. (ii) We show that delayed association is better suited for clustering subspaces that have ambiguities, i.e. when subspaces intersects or contaminated by outliers/noise. (Received July 25, 2017)