1123-68-362 **Fiona Knoll*** (fknoll@g.clemson.edu), **Shuhong Gao** (sgao@clemson.edu), **Yue Mao** (yuem@clemson.edu) and **Lin You** (mryoulin@gmail.com). *Explicit Johnson-Lindenstrauss projection of high dimensional data.*

Johnson and Lindenstrauss (1984) proved that any finite set of data in a high dimensional space can be projected into a low dimensional space with the Euclidean metric information of the set being preserved within any desired accuracy. Such dimension reduction plays a critical role in many applications with massive data. There have been extensive effort in the literature on how to find explicit constructions of Johnson-Lindenstrauss projections. In this presentation, we will show how algebraic codes over finite fields can be used for explicit and fast Johnson-Lindenstrauss projections of data in high dimensional Euclidean spaces. We will also give a brief overview on the lowest bound to which one can project data while preserving the Euclidean metric. (Received August 30, 2016)