1157-62-651 **Omar De la Cruz Cabrera*** (odelacru@kent.edu), Department of Mathematical Sciences, PO Box 5190, Kent, OH 44242. *Issues in Kernel Methods for Exploratory Data Analysis.*

Multivariate methods like Principal Components Analysis (PCA) are extremely useful in the exploratory analysis (EDA) of complex data; however, the interpretation of the results is often fraught with difficulties. Kernel methods add a great amount of power to a large variety of multivariate techniques, by easily allowing the introduction of non-linearities, but in the exploratory case, unfortunately, the interpretation of the results becomes even more delicate.

We will show how some peculiarities that occur in Kernel PCA (KPCA) help explain phenomena that occur in classical PCA, especially in high-dimensional settings; we argue that conclusions derived from cursory examination of the result of PCA (especially in genomics) need to be reexamined critically, in the light of the facts presented here. We also comment on the critical issue of bandwidth choice, and some the the computational challenges involved. (Received February 05, 2020)