

1116-15-2029 **Hon-Leung Lee*** (hllee@uw.edu). *Orthogonally invariant matrix varieties.*

The problem of finding the closest point in a set, with respect to Euclidean distance, arises frequently in applications. In this talk we focus on orthogonally invariant matrix varieties and provide a framework, based on "transfer principles" and singular value decomposition, for computing and counting the real smooth critical points of this minimization problem, as well as finding the minimizers. We will also discuss the connections of this theory to the notion of Euclidean distance degree of a variety. This is a joint work with Dmitriy Drusvyatskiy, Giorgio Ottaviani and Rekha R. Thomas. (Received September 21, 2015)