1077-VE-2346   **Krishna Kaphle*** (`kkaphle@iwu.edu`), **Frits H Ruymgaart** and **George Gaines**. *Estimation of eigenvalues and their multiplicities of a covariance operator.*

Covariance operators play an important role in analysis of functional data. Estimation of eigenvalues, eigenvectors and eigenprojections of a covariance operator together with the problem of testing equality of covariance operators need to be addressed. Many discussions about those issues are already in literature, however, they have got little attention when eigenvalues are not simple. We will discuss the use of differentiation of an analytic function of an operator in estimating the eigenvalues, their multiplicities, and corresponding eigenprojections of covariance operator based on a sample of functional data. (Received September 22, 2011)