On the Orthogonal Flows

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Abstract

This talk is concerned with the matrix differential e quation approximating the k-dimensional dominant eigenspace of a matrix. The solution of the matrix differential equation is orthogonal and is called generalized orthogonal flow. The existence and uniqueness of the generalized orthogonal flow are guaranteed for all time $t \in R$. An orthogonal flow, which has the shortest arc-length, has been constructed and is called the best path of generalized orthogonal flows. We show that the best path is Oja's flow. We also analyze the asymptotic behaviors and the convergence rate of the best path.