HYPERSPECTRAL IMAGING TARGET DETECTION BASED ON IMPROVED KERNEL PRINCIPAL COMPONENT ANALYSIS

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ABSTRACT—The kernel principal component analysis (KPCA) algorithm has been extensively used in target detection and classification for hyperspectral imaging. Kernel parameters are a key component of KPCA, but no optimal method for selecting appropriate parameters has been proposed. We study the largest eigenvalue and sum of the eigenvalues of characteristic equation of kernel matrix, and then put forward a proposal for parameter selection. Experiments show that the proposal enables best parameter selection.