Statistical Signal Processing in Hyperspectral Images: A Framework for Reduced Dimensionality in Detection

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Abstract

There are many applications in which the goal is to detect a chemical of interest in hyperspectral images. A standard tool for detection is a matched subspace detector. The matched subspace detector is a generalized likelihood ratio test based on the linear mixing model. We present a framework for generating reduced dimension detection scores based on minimization of the bias-squared plus variance of particular components of the linear mixing model. Finally, we will pose the ideal context for this methodology and future work.