

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

**Tegan Emerson**

**Colorado State University**

## **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.