A Sequential Framework for Image Change Detection

Abstract:

We present a sequential framework for change detection. This framework allows us to use multipleimages from reference and mission passes of a scene of interest in order to improve detection performance. It includes a change statistic that is easily updated when additional data becomes available. Detection performance using this statistic is predictable when the reference and image data are drawn from known distributions. We verify our performance prediction by simulation. Additionally, we show that detection performance improves with additional measurements on a set of synthetic aperture radar images and a set of visible images with unknown probability distributions.