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Abstract

In this paper, we investigate how moving objects can be detected when images are impacted by atmospheric turbulence. We present a geometric spatio-temporal point of view to the problem and show that it is possible to distinguish movement due to the turbulence vs. moving objects. To perform this task, we propose an extension of 2D cartoon+texture decomposition algorithms to 3D vector fields. Our algorithm is based on curvelet spaces which permit to better characterize the movement flow geometry. We present experiments on real data which illustrate the efficiency of the proposed method.

Keywords: Moving object detection, atmospheric turbulence, decomposition, curvelet spaces

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