1131-65-64 **Yifei Lou*** (yifei.lou@utdallas.edu), 800 West Campbell Road, Richardson, TX 75080, and **Sung Ha Kang**, **Stefano Soatto** and **Andrea Bertozzi**. *Video Stabilization of Atmospheric Turbulence Distortion.*

We present a method to enhance the quality of a video sequence captured through a turbulent atmospheric medium, and give an estimate of the radiance of the distant scene, represented as a "latent image," which is assumed to be static throughout the video. Due to atmospheric turbulence, temporal averaging produces a blurred version of the scene's radiance. We propose a method combining Sobolev gradient and Laplacian to stabilize the video sequence, and a latent image is further found utilizing the "lucky region" method. The video sequence is stabilized while keeping sharp details, and the latent image shows more consistent straight edges. We analyze the well-posedness for the stabilizing PDE and the linear stability of the numerical scheme. (Received June 30, 2017)