

Seeing in the Dark - an Analysis of Bat Flight through Stereographic Infrared Videography
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We have used stereographic infrared videography to record Brazilian free-tailed bats and Cave Myotis in California, Massachusetts, New Mexico, and Texas, and analyze their flight paths. This required the development of a collection of procedures for field work and video analysis. We present guidelines of camera setup and calibration procedures in the field. We then discuss our methods for processing the recorded videos, which can be divided into three categories. First, the parameters are computed that describe the geometry of the scene by manually annotating points in the scene, on a calibration device, and on the animals. Computer vision techniques are then applied to estimate the flight paths of the bats. These include detection of individual bats in each camera view, reconstruction of their positions in three-dimensional space, and tracking. Finally, flight behavior can be analyzed based on the estimated paths.