

Abstract

This invention discloses an unmanned aerial vehicle (UAV) inspection method for power line based on human visual system. External force accident detection and early warning process of power line uses UAV armed with binocular visual measuring equipment to obtain information about distribution of the power line and its surroundings for UAV video capture module. Image preprocessing module preprocesses the power line image of the input system. Power line detection module uses human visual attention mechanism to complete segmentation of the power line in the image. Binocular image registration module uses SURF algorithm to provide exact match of the feature points. The obstacle detection and early warning module uses binocular visual principle to calculate the three-dimensional coordinates of the matching point and the power line. The result output and feedback module calculates the vertical distance from the matching point to the power line according to the information about the space coordinates to complete feedback of the information about the obstacle with a threat to the power line. The method of this invention can accurately analyze the obstacle of power line in a quantitative manner, and the analysis result is stable and objective.