



## **THE FAST METHOD FOR CORRECTION OF DISTORTION ON INFRARED MARKER-BASED TRACKING SYSTEM**

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*Abstract- This paper adopts ordinary CCD cameras and IR filters to constitute IR cameras for a marker-based quadri-ocular tracking system. However, the IR filters will affect the accuracy of the tracking system. Therefore, this paper analyses the refraction of IR filters and finds IR filters will bring about the bigish radial distortion on imaging process. And then, this paper directly uses Zhang's technique to calibrate the parameters of IR cameras in infrared environment by adjusting the imaging conditions of calibration. To improve the accuracy and satisfy the real-time requirement of the tracking system, a real-time method to correct the radial distortion is proposed in this paper. The experiments show that the speed of the correction method is satisfactory, and the accuracy of tracking system is effectively improved by the method.*

*Index terms: CCD Sensor, Infrared Pass Filter, Radial Distortion, Calibration, Correction.*