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RESEARCH OF ROBOT ARM POSITIONING METHOD BASED ON HAZARD CAMERA

Abstract

According to the science application of lunar rover of Chang'e-3 project, a method based on stereo vision is proposed in the paper for robot arm plane positioning. Firstly, hazard camera imaging model is summarized and spherical projection is transformed to perspective projection, furthermore, epipolar images are complemented from the original fisheye images; Secondly, least square matching is applied to find the corresponding target points; Finally, the target coordinates were calculated by forward intersection, and the target plane normals are calculated. Robot arm location experiments were performed in a simulated lunar environment, the positioning results successfully guided the arm detection, and experimental results show that this method can achieve higher precision.