

The thesis presents rectification methods of an omnidirectional stereo pair. Several methods are developed and a novel rectification method called stereographic rectification is introduced. In the second part of the thesis, a method of 3D reconstruction from a stereo pair rectified using an arbitrary method of the adduced methods is presented. Further, a method of judging the accuracy of an essential matrix based on the stereographic rectification is devised. At the end of the thesis, several examples of image pairs rectified by OmniRect Matlab toolbox developed as a part of this work, are shown.