

# Reliable Estimation of Disparity Map in Textureless Region of Roadway

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**Abstract**— This study proposes a reliable disparity estimation method that plays an important role in stereo vision. Most of conventional disparity estimation algorithms have a critical weakness. They may generate erroneous results in monotonous or textureless areas such as roadways and hallways. To improve the reliability of estimated disparity in such areas, we select a textureless road area as a region of interest (ROI) and generate a synthetic disparity map which can be modelled by a simple gray-scaled gradation pattern according to the depth. Finally, we combine the conventional and synthetic disparity maps to generate a more reliable disparity map. Simulation results show that the disparity map constructed from the proposed algorithm is more reasonable and trustworthy.

**Keyword**— Stereo camera, Disparity estimation, Textureless region, Block Matching



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