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Anisotropic Approach for Discontinuity Preserving in Optical Flow Estimation

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Abstract : Estimation of optical flow from a sequence of images using variational methods is one of the most successful approach. Discontinuity between different motions is one of the challenging problem in flow estimation. In this paper, we design a new anisotropic diffusion operator, which is able to provide smooth flow over a region and efficiently preserve discontinuity in optical flow. This operator is designed on the basis of intensity differences of the pixels and isotropic operator using exponential function. The combination of these are used to control the propagation of flow. Experimental results on the different datasets verify the robustness and accuracy of the algorithm and also validate the effect of anisotropic operator in the discontinuity preserving.

Keywords : optical flow, variational methods, computer vision, anisotropic operator
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