

Speed up Vector Median Filtering by Quasi Euclidean Norm

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Abstract : For reducing impulsive noise without degrading image contours, median filtering is a powerful tool. In multiband images as for example colour images or vector fields obtained by optic flow computation, a vector median filter can be used. Vector median filters are defined on the basis of a suitable distance, the best performing distance being the Euclidean. Euclidean distance is evaluated by using the Euclidean norms which is quite demanding from the point of view of computation given that a square root is required. In this paper an optimal piece-wise linear approximation of the Euclidean norm is presented which is applied to vector median filtering.

Keywords : euclidean norm, quasi euclidean norm, vector median filtering, applied mathematics

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