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Abstract

Motion Estimation (ME) is an integral part of any video encoder and a large number of Block Matching Motion Estimation (BMME) Algorithms are proposed to cope the computational complexity and increase quality of ME process requirement. Therefore, it is necessary to evaluate the performance of these ME algorithms for different motion activities. In this paper five fast famous BMME algorithms are considered to evaluate their performance on the basis of ME time, search points, PSNR and Means Square Error (MSE). The algorithms evaluated in this paper are considered for state of the art video compression standards like MPEG 1, to MPEG4 and H. 261 to H. 264. Results show that the PSNR of Diamond Search (DS) is best for all test video sequences, whereas, Hardware Modified DS takes maximum number of search points to calculate motion vector. Moreover, hexagon search algorithm takes minimum number of search points but its PSNR is considerably lower than the other algorithms.

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Computer Science

Index Terms

Algorithms

Keywords

Motion estimation Motion vector MBD DS FHS MDS HexBS

