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## Quad - Tree based Impulse Detection Rankordered regularization

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**Abstract** - It has been observed from literature, a 2-D impulse filtering algorithm for the restoration of impulse corrupted digital images . The algorithm incorporates a Quad - tree decomposition stage to facilitate pixel classification in the impulse detection phase and an efficient adaptive filtering scheme in the restoration phase. The impulse detection scheme of the algorithm avoids misclassification of signals as impulses by clearly distinguishing the high frequency image details from impulse corrupted pixels. The adaptive restoration phase identifies the most suitable signal restorer from among the true signals of a reliable neighborhood . Experimental results in terms of subjective assessment and objective metrics favor the proposed algorithm at all impulse noise levels over many top- ranking filters .