Abstract

Images corrupted by the noise during either transmission or acquisition process. Filtering and or smoothing an important task to reduce the effect of noises that contaminates images. Hence the processed image is useful for further applications. This paper analyses the suitable smoothing filter for the edge mask derived using Third Order Difference Equation (TODE). State of the art edge preserving smoothing filters like non linear bilateral filter and linear guided filter is applied on different sample images after degrading them with Additive White Gaussian Noise(AWGN). Since AWGN is most common type of Gaussian noise useful for testing. Both second and third order edge mask is tested using these approaches. Performance metric such as MSE, PSNR and Entropy were computed. The results prove that the guided filter is best suited for the TODE edge mask.

References

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**Index Terms**

- Computer Science
- Information Sciences

**Keywords**

- Edge detection
- Third Order Difference Equation (TODE)
- Edge Mask
- Smoothing
- Bilateral filter
- Guided Filter.