

# Wavelet Oriented Anisotropic Diffusion in Image Enhancement

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## **Abstract**

In this paper, we introduce a new anisotropic diffusion partial differential equation, in which the gradients is adjusted by the wavelet transform of the solution. The new model adopts wavelet transform theory so that the numerical implementation is more effective and accurate. The existence and uniqueness of the solutions are proved. The equation can formulate image enhancement and the numerical implementation shows that the new model gives a better result in image noise removal and edge detection.