



Image Quality Assessment Method for Underwater Acoustic Communication Based on Digital Watermarking

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Abstract- This paper proposes a method of reduced-reference image quality assessment based on watermarking algorithm in underwater acoustic channel. By embedding the watermark image into the original one, then delivering the combined image through the channel distortion, the same channel distortion would be exposed to the original and the watermark image. In the receiver, we use the blind extraction methods to recover the watermark image and use the watermark degradation to evaluate the quality of the original one. In this paper, we build three kinds of channels: AWGN channel, Rice fading channel and GB model channel to validate the feasibility of the method which would be used in the underwater acoustic channel.

Index terms: Digital Watermark, PSNR (Peak Signal to Noise Ratio), Image Quality Assessment (IQM), UAC (Underwater Acoustic Communication).