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Color image watermarking based on self-embedded color permissibility with preserved high image quality and enhanced robustness

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Abstract: A robust wavelet-based blind technique for color image watermarking is proposed denoted as color image watermarking using self-embedded color permissibility (CIW-SECP) is proposed. CIW-SECP technique is based on embedding two watermarks in a spread-spectrum fashion in the U and V planes of the YUV color space. The watermark weights are generated based on the so-called "color permissibility" of the U and V planes. These weights are generated and self-embedded in the relative U and V planes based on the color characteristics of the image under question. Experimental results have shown that the CIW-SECP technique exhibits very high imperceptibility (PSNR [71.21-85.95] dB) as well as superior performance against most prominent attacks.