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Semiblind copyright protection of color images based on a hybrid classified watermarking technique

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Abstract: Color image watermarking with high imperceptibility and robustness capabilities is still an emerging topic in the field of multimedia copyright protection. A novel approach for robust and semiblind watermarking of still color images in the wavelet domain is proposed. The proposed technique utilizes the human visual system characteristics, and an innovative watermark weight-calibrating procedure to create various watermarks at different classes of the color image under consideration. It decomposes the input color image into specific classes where each class is applied to an appropriate watermarking procedure that takes into account its grayness and/or chromaticity behaviors on a pixel-wise and color permissibility basis. The experimental results have shown that the proposed technique exhibits very high imperceptibility (80.1 to 89.2 dB) and is sufficiently robust to guard against JPEG compression, additive noise, filtering, moderate cropping, scaling, and other common image manipulations.