



REVERSIBLE WATERMARKING AUTHENTICATION ALGORITHM FOR COLOR IMAGES BASED ON COMPRESSED SENSING

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Abstract- Aiming at the shortcomings of existing reversible watermarking for image authentication, such as poor ability of tamper detection and localization, and low attention of reconstruction after tampering, a reversible watermarking authentication algorithm based on compressed sensing for color image was proposed. On the side of the sender, the original image has been divided into blocks and carried out compressed sensing to generate image hash which works as the watermark information, and was embedded by the reversible watermarking of difference histogram algorithm. On the side of the receiver, watermark was extracted for authentication. For the tampered block which was failed in authentication, original image will be restored by reconstruction of compressed sensing. Experimental results show that the algorithm combines of reversible watermarking and compressed sensing, so that the detection rate of image authentication has been improved, as well as the robustness to resist sparse noise and cutting and the ability to reconstruct the original image.

Index terms: image authentication, reversible watermarking, compressed sensing, difference histogram, image reconstruction.