INFORMED WATERMARK EMBEDDING IN THE FRACTIONAL FOURIER DOMAIN (WedAmOR9)

Author(s): Oktay Altun (University Of Rochester, United States)
Mark Bocko (University Of Rochester, United States)
Gaurav Sharma (University Of Rochester, United States)

Abstract: We propose an informed watermark embedding method in fractional Fourier domain. Detectability and imperceptibility of the watermark sequence constraints as well as realness of the resulting image in spatial domain are imposed on the embedded watermark using a set theoretic framework. The watermarked image is determined using the method of projections onto convex sets (POCS) to simultaneously satisfy the multiple constraints. Experimental results are presented to illustrate the effectiveness of the method.