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Estimation and Restoration of Ill-Posed Parameters for Underwater Motion Blurred Images

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Abstract : Underwater images degrade their quality due to atmospheric conditions. One of the major problems in an underwater image is motion blur caused by the imaging device or the movement of the object. In order to rectify that in post-imaging, parameters of the blurred image are to be estimated. So, the point spread function is estimated by the properties, using the spectrum of the image. To improve the estimation accuracy of the parameters, Optimized Polynomial Lagrange Interpolation (OPLI) method is implemented after the angle and length measurement of motion-blurred images. Initially, the data were collected from real-time environments in Chennai and processed. The proposed OPLI method shows better accuracy than the existing classical Cepstral, Hough, and Radon transform estimation methods for underwater images.

Keywords : image restoration, motion blur, parameter estimation, radon transform, underwater
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