[conference]IEEEtran cite amsmath,amssymb,amsfonts algorithmic graphicx textcomp xcolor document

Mathematical Depiction on Optical Characteristic of WaterWave

1st Yi Jiang dept. EIC

2nd Zhijie Hu dept. EIC

3rd Yin Ge dept. EIC

abstract Omnipresent water has been well studied for its physical, chemistry and biological property. Besides, its electric polarity also equipped water with unique optical characteristics. I believe anyone here has ever saw the glittering drops on petals, colored rainbow after the watery sky, and using tranquil lake us mirror. However, the water is not always flat, many times, mostly powered by wind, and something like the shake of the earth, we see water wave. Well, the weird thing comes here, we did not actuary see the water, but we see the optical effect of water, like distortion, reflection, or refraction. Mind that we didnt mention the diffusion here, as any object that not emitting visible light themselves are visible most because of diffusion. In this paper, we focused on the spacial and time-domain periodicity of water wave, and study its optical characteristics from a reflection event happened at a place for a single light to the water wave as a whole.