

## **Modulation of a Periodic Object with Infinitely Thin Lines by a Human Eye in Presence of Stiles-Crawford Effect of the First Kind Using Coherent Light**

N K SHARMA <sup>#1</sup>, K MISHRA <sup>#2</sup> and S K KAMILLA <sup>#3</sup>

<sup>#</sup> Department of Physics, Institute of Technical Education & Research, Siksha 'O'  
Anusandhan University, Bhubaneswar-751030, Odisha, India

<sup>1</sup> nachiketasharma@soauniversity.ac.in

<sup>2</sup> kampalmishra@soauniversity.ac.in

<sup>3</sup> sushantakamilla@soauniversity.ac.in

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**Abstract :** The spatial frequency response of a human eye apodized with Stiles-Crawford effect of the first kind is studied under the condition of the duty cycle of a periodic object with triangular transmission profile tending to zero thereby consisting of only infinitely thin lines. First, the intensity distribution in the diffraction images of this special object is obtained by considering the human eye as being apodized with the Stiles-Crawford effect of the first kind. Next, the incident illumination is taken to be spatially coherent. And finally, the modulation is computed to ascertain the quality of the image quantitatively. We have shown that in agreement with the recent experimental finding the modulation of a periodic object with infinitely thin lines by a human eye in presence of Stiles-Crawford effect of the first kind is insensitive to coherent illumination or the SCE I apodization does not improve the quality of the image in the entire range of spatial frequency under spatially coherent illumination.

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