



# PHASE SPACE REPRESENTATIONS OF ZERO-ORDER BESSEL BEAMS AND SUPERIMPOSED ZERO-ORDER BESSEL BEAMS

FRANULFO L. DELA CRUZ, RAPHAEL A. GUERRERO and JOB A. NABLE

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In this work, we take advantage of two geometric aspects of phase space representations for optical systems. One aspect involves the geometric representation of the Wigner and the Husimi distribution function in terms of their graphs, hence their visualization, in phase space. The other aspect deals with the Wigner function as a link between Fourier optics and geometric optics. We apply the Wigner function and Husimi function to analyze and come up with representations of Bessel beams, a special class of propagating waves with properties that have been found useful in many applications.

MSC: 78A05, 81S30, 94A12

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