

Abstract Submitted
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Radius of Laguerre Gaussian Beam¹ BASIL DAVIS, Tulane University

— The transverse structure of the Gouy phase shift in light beams carrying orbital angular momentum is analyzed. It is shown that the Gouy radius r_G characterizing the transverse structure grows as $\sqrt{2p + |\ell| + 1}$ with the nodal number p and photon angular momentum number ℓ . The Gouy radius is shown to be closely related to the root-mean-square radius of the beam, and the divergence of the radius away from the focal plane is determined. Finally, the rotation of the Poynting vector in the context of the Gouy radius is examined.

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Basil Davis
Tulane University

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