

Interaction of Tungsten Tips with Laguerre-Gaussian Beams

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Abstract : The interaction of femtosecond laser pulses with metallic tips has been studied extensively, and they have proved to be a very good source of ultrashort electron pulses. A study of the interaction of femtosecond Laguerre-Gaussian (LG) laser modes with Tungsten tips is presented here. Laser pulses of 35 fs pulse durations were incident on Tungsten tips, and their electron emission rates were studied for LG ($l=1$, $p=0$) and Gaussian modes. A change in the order of the interaction for LG beams is reported, and the difference in the order of interaction is attributed to ponderomotive shifts in the energy levels corresponding to the enhanced near-field intensity supported by numerical simulations.

Keywords : femtosecond, Laguerre-Gaussian, OAM, tip

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