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The behavior of an instantaneous Poynting vector in the laser beams

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<p>In this work we investigate the behavior of an instantaneous Poynting vector for different types of cylindrical symmetric beams such Gaussian beams, Bessel beams and so on. In most investigations for energy flow in real laser beams, the oscillation component of the Poynting vector is not considered. However this component of the Poynting vector carries useful information regarding beam behavior such as beam divergence, self reconstruction and diffraction effects, which are difficult or nearly impossible to extract from the field of the beam or the time averaged component of the pointing vector. The behavior of the Poynting vector is different in the near and far fields and understanding such differences leads to useful interpretation of the different beam behavior in these regions which is also part of what is investigated in this study.

Level (Hons, MSc,
   PhD, other)?

Dr

Consider for a student
   award (Yes / No)?

No

Would you like to
 submit a short paper
 for the Conference
 Proceedings (Yes / No)?

No

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