

PHYSICAL PROPERTIES OF BESSEL, AIRY AND NON-DIFFRACTING BEAMS

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Since their introduction 30 years ago, Bessel beams have been the subject of polemic arguments due to their apparent non-diffracting property and others features that are physically and mathematically inconsistent. Nevertheless, they have been the subject of thousands of publications around the world investigating their properties and potential applications. Another family of beams with similar odd features are Airy beams that have been the trend in optical investigations during the last decade. In this talk, based on mathematical physics principles I will discuss the properties of these beams and other families of non-diffracting beams unveiling their real physics clarifying their apparent strange behaviour.

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