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Physical Sciences

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**WHY DO WE ADD WAVE-AMPLITUDES IN TREATING
INTERFERENCE BUT INTENSITIES IN TREATING
SCATTERING?***

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(Abstract)

This paper deals with a problem in physical optics which is not adequately treated in most textbooks. A new proof is furnished for the

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theorem that when a light wave is compounded from many contributing waves of uncorrelated phases, the average intensity of the resultant waves equals the sum of the intensities of the individual waves.

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