

Abstract Submitted
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Visualizing the Superposition Process MICHAEL AMBROSELLI, CHANDRASEKHAR ROYCHOUDHURI, University of Connecticut — We demonstrate the dynamic evolution of superposition effects using two intersecting beams of electromagnetic radiation, to underscore the importance of visualizing interaction processes. Recordable fringes within the volume of superposition have time evolving bright fringe patterns, because the two superposed E-vectors oscillate through zero values while staying locked in phase. If a detector registers steady, stable bright fringes, it must do so by time integration. The QM recipe to model energy exchange by taking the square modulus of the sum of the complex amplitudes has this time integration built into it. We also discuss the importance of assigning proper physical processes to the mathematical relationships whenever possible: the algebraic symbols should represent physical parameters of the interactants and the mathematical operators connecting the symbols should represent allowed physical interaction processes and the guiding force.

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