Abstract Submitted
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Frustrated Total Internal Reflection applied to Quantum Tunneling[1] NATHANIEL HULL, JIA-AN YAN, Towson Univ — The objective of this project is to demonstrate an optical phenomenon, frustrated total internal reflection (FTIR), by numerically solving the time-dependent Schrodinger equation (TDSE) in quantum mechanics, and to illustrate the correlations between FTIR and the quantum tunneling in one-dimensional quantum structures. We will use a MATLAB program to numerically propagate a Gaussian wave packet to penetrate finite square barriers. The transmission coefficient is then calculated as a function of the distance between two rectangular barriers/wells. The results will be useful to elucidate the correlations between optical FTIR and quantum tunneling.

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