

Abstract Submitted  
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**A null experiment shows that preferred frame effects do not exist for tunneling photons with superluminal group velocity** GEORGE SOLI, Integrated Detector Systems — An experimental method, for demonstrating that superluminal group velocity, associated with tunneling photons, is not superluminal energy propagation, is presented. The method measures possible preferred frame effects that would exist for superluminal energy propagation. In Lorentz invariant theories, causal superluminal energy propagation in one reference frame is acausal in other frames. But Lorentz-violating theories have a preferred frame in which causal evolution is defined and superluminal propagation becomes causal in all reference frames. Null measurements show that preferred frame effects do not exist relative to the Cosmic Microwave Background rest frame for tunneling photons with superluminal group velocity.

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