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Impossibility of negative group velocity in a passive periodic layer structure with or without loss LOUIS POIRIER, ROBERT I. THOMPSON, University of Calgary, ALAIN HACHÉ, Université de Moncton — Imagine receiving a signal through a transmission line before it was sent. The theory for group velocity allows superluminal tunneling times and some believe negative tunneling times as well. We shall discuss experimental results from our own work [1] and other published materials [2] that claim to observe both superluminal and negative group velocities in a simple coaxial cable periodic system driven in the MHz regime. Detailed computational analysis of the system reveals that negative velocities are not possible in a linear passive periodic system. A simple error analysis will show that it is possible to obtain uncertainties as large as the measurements themselves, which can lead to some misleading interpretations of results. [1] A. Haché and L. Poirier, Phys. Rev. E **65**, 036608 (2002) [2] J. N. Munday and W. M. Robertson, App. Phys. Lett. **81**, 2127 (2002)

Prefer Oral Session
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Louis Poirier
louisp@phas.ucalgary.ca
University of Calgary

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