



Physics Colloquium

Dr. Rob Adamson

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Friday, 13 November 2009

4:00pm, PSC 3046

The Physics of Hearing

The mammalian inner ear is an incredibly sensitive and complex organ whose fundamental processes are only starting to be understood in a quantitative way. In performing its job of converting pressure waves into neural impulses, the cochlea acts as a waveguide, a spectral filter and a compressive, non-linear amplifier. This combination of properties allows the ear to capture signals over enormous dynamic range of more than 120 dB, and to detect signals so weak that they compete with the Brownian motion of the cochlear fluids.

My research group is currently developing high-frequency ultrasound, optical coherence tomography and high-sensitivity optical hydrophones as tools to help us to study the physics at play in the cochlea. I will discuss our progress to date and the future direction of our research which will try to make better sense of the sense of hearing.

For further information on Physics colloquia visit <http://physics.stfx.ca>
Doughnuts and coffee will be served at 3:45 pm