

SÉMINAIRE DU DÉPARTEMENT DE GÉNIE PHYSIQUE

Jeudi, 21 novembre 2019 – 11h00

Amphithéâtre du Pavillon J.-A. Bombardier, salle 1035

Prof. John E. Sipe

Department of Physics, University of Toronto

Quantum nonlinear optics in ring resonators



In its simplest configuration, a ring resonator coupled to a single channel is an all-pass filter in the linear regime. Such devices and their generalizations have been investigated both experimentally and theoretically in the nonlinear regime, where either spontaneous four-wave mixing or spontaneous parametric down-conversion can be used to create sources and processors of nonclassical light. Applications include the generation of entangled photon pairs, the development of heralding sources and devices for quantum frequency conversion, and the generation of squeezed light. It is essential to consider scattering losses in all these applications. While at one level such structures are examples of general input/output theory, they have their own interesting features and are an example of systems that can be worked out in detail to reveal the physics of some of these features. We discuss some of our recent work in this area.

Vous êtes tous les bienvenus.

Responsable : Denis Seletskiy

Courriel : denis.seletskiy@polymtl.ca

Poste : 5976

