“Quantum Imaging and Sensing Beyond Rayleigh Resolution”

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One question of great importance in the field of imaging is the issue of the resolution which has been considered to be limited by the Rayleigh criterion. However recently one has developed several methods by which this limit can be overcome. Some of these newer possibilities include use of evanescent waves [plasmonics] and the use of sources of light which produce entangled photon pairs. I would describe the progress made using entangled photon pairs. I would show how stimulated parametric processes along with spontaneous ones are especially useful in producing high visibility and large signals at high gains of the parametric process. I address both the questions of super resolution and super sensitivity. The entangled photon pairs have other very promising applications such as in light scattering.

Tuesday April 15, 2008
4:00 pm. Room 207
Engineering and Physics Building

Texas A&M University
Institute for Quantum Studies

Coffee and cookies to be served at 3:45 p.m.