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SQUEEZED PHONONS . By using ballistic sound pulses--- directional sound waves that move considerable distances without scattering---as probes, physicists have learned to image certain internal features of crystals such as point defects. Indeed, the advent of "phonon optics," including the development of phonon mirrors, filters, lenses, and other acoustical analogues of classical optical elements, has given scientists a new way of looking inside solids. Another optical phenomenon, from the realm of quantum optics, may also have an acoustic analogue. In "squeezed light" (created by passing short laser pulses through special crystals) the uncertainty in the amplitude of a laser beam can be reduced to a level below that normally allowed by the Heisenberg uncertainty principle, a level known as the zero-point quantum noise level. This increased knowledge comes at the expense of greater uncertainty in the frequency of the light. Squeezed light may have applications in data transmission and in high-precision metrology. Now, Franco Nori (313-764-3271) at the University of Michigan suggests that this same idea can be applied to phonons. Keeping in mind that a phonon traveling through a solid is equivalent to the propagation of a slight disturbance in the local arrangement of atoms in the solid, then the creation of squeezed phonon states would lead to the possibility of reducing the quantum fluctuations of atomic displacements to below the zero-point noise level. (Xuedong Hu and Franco Nori, Physical Review Letters, 25 March 1996.)