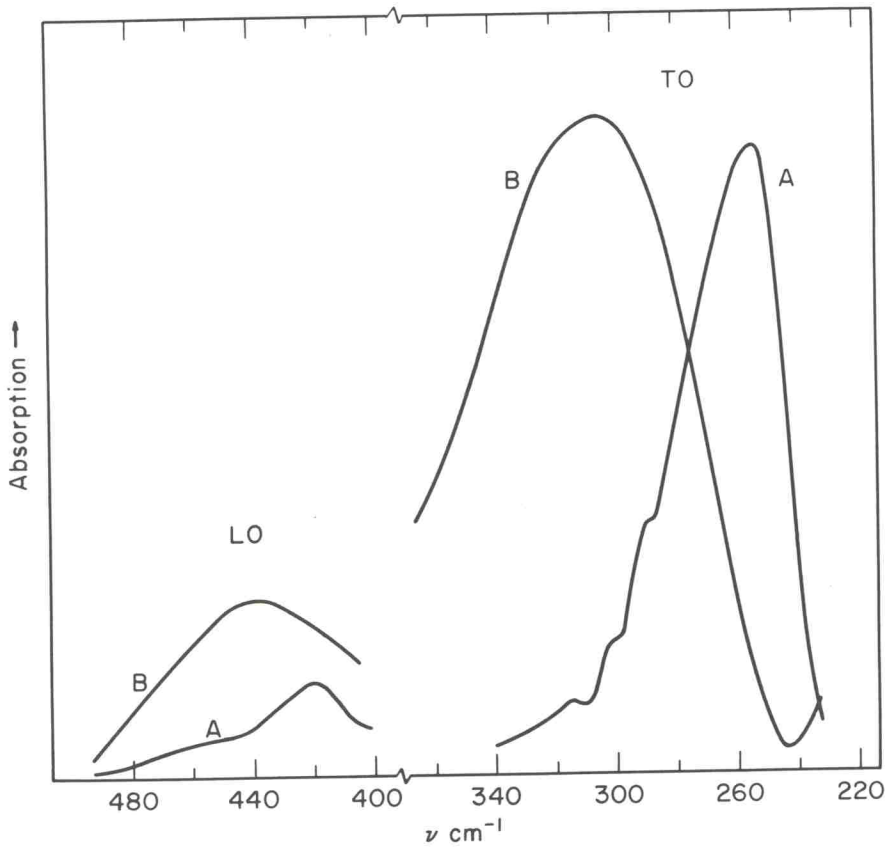

Fig. 2. Comparison of the Transverse and Longitudinal Modes in NaF with and without Pressure.

LiF. A similar analysis was made for KBr and in this crystal the "self-energy" shift is negligible. A similar result was obtained for RbI using other techniques.[22,26]

The results obtained for the Grüneisen parameters for the long-wavelength optical modes from equation 1 and equation 2,

$$\gamma_j(k) = \frac{\partial \ln \nu_j(k)}{\partial \ln V} \qquad (2)$$

are tabulated in Table IV. The agreement with the calculations made from those assuming a rigid-ion model with central forces incorporating repulsion terms of the Born-Mayer [exp(-r/p)] and inverse-power (r^{-n}) type agree well. The results using Cowley's theory give somewhat larger values of γ.

TABLE IV

Gruneisen Parameters for the Long Wavelength Optical Mo

al from Eq. 2	Calculated Born-Mayer[27]	r^{-n} repulsion[28]	Cowley[29]	C M
2.59	2.44	3.46		
2.95	2.43	3.00		
2.83	2.52	2.95	3.27	
2.46	2.52	2.92		