

Although simple equations of state will give accurate values of the density at fairly high pressure, simple estimates of the elastic properties and seismic wave velocities are probably not very accurate in most regions of geological importance.

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### References

- ACHAR, B. N. N. and G. R. BARSCH (1971a), *Phys. Stat. Sol.* **A6**, 247.
- ACHAR, B. N. N. and G. R. BARSCH (1971b), *Phys. Rev.* **B3**, 4352.
- AHRENS, T. J. and L. THOMSEN (1972), *Phys. Earth Planet. Interiors* **5**, 282.
- ANDERSON, O. L. (1970), *J. Geophys. Res.* **75**, 2719.
- ANDERSON, O. L. and H. H. DEMAREST, JR. (1970), *J. Geophys. Res.* **76**, 1349.
- ANDERSON, O. L. and R. C. LIEBERMANN (1970), *Phys. Earth Planet. Interiors* **3**, 61.
- BARRON, T. H. K. (1955), *Phil. Mag. Ser. 7*, **46**, 720.
- BARRON, T. H. K. (1957), *Ann. Phys. New York* **1**, 77.
- BARSCH, G. R. and H. E. SHULL (1971), *Phys. Stat. Sol.* **43B**, 637.
- BARTELS, R. A. and D. E. SCHUELE (1965), *J. Phys. Chem. Solids* **26**, 537.
- BASSETT, W. A., T. T. TAKAHASHI, H.-K. MAO and J. S. WEAVER (1968), *J. Appl. Phys.* **39**, 319.
- CHANG, Z. P. and G. R. BARSCH (1971), *J. Phys. Chem. Solids* **32**, 27.
- COCHRAN, W. (1971), *CRC Crit. Rev. Solid State Sci.* **2**, 1.
- COWLEY, R. A. (1962), *Proc. Roy. Soc. London A* **268**, 121.
- COWLEY, E. R. (1971), *J. Phys. C* **4**, 988.
- DECKER, D. L. (1971), *J. Appl. Phys.* **42**, 3239.
- DEMAREST, H. H., JR. (1972), *J. Geophys. Res.* **77**, 848.
- GHAFALEHBASHI, M. and K. M. KOLIWAD (1970), *J. Appl. Phys.* **41**, 4010.
- GLYDE, H. R. and M. L. KLEIN (1971), *CRC Crit. Rev. Solid State Sci.* **2**, 181.
- KELLERMANN, E. W. (1940), *Phil. Trans. Roy. Soc. London* **238**, 513.
- LEWIS, J. T., A. LEHOCZKY and C. V. BRISCOE (1967), *Phys. Rev.* **161**, 3, 877.
- NAMJOSHI, K. V., S. S. MITRA and J. F. VETELINO (1971), *Phys. Rev.* **B3**, 4398.
- PECKHAM, G. (1967), *Proc. Phys. Soc.* **90**, 657.
- SAMMIS, C. G. (1970), *Geophys. J.* **19**, 258.
- SAMMIS, C. G. (1971), *Seismological applications of lattice theory*, Ph.D. Thesis, Calif. Inst. Technol. (The part relating to NaCl has been published in SPETZLER *et al.*, 1972.)
- SLAGLE, O. D. and H. A. MCKINSTRY (1967), *J. Appl. Phys.* **38**, 437.
- SPETZLER, H., C. G. SAMMIS and R. J. O'CONNELL (1972), *J. Phys. Chem. Solids* **33**, 1727.
- STRIEFLE, M. E. and G. R. BARSCH (1972), *J. Phys. Chem. Solids*, to appear.
- THOMSEN, L. (1970), *J. Phys. Chem. Solids* **31**, 2003.
- THOMSEN, L. (1971), *J. Geophys. Res.* **76**, 1342.
- THOMSEN, L. (1972), *J. Phys. Chem. Solids* **33**, 363.
- THURSTON, R. N. (1965), *J. Acoust. Soc. Am.* **37**, 348.
- WALLACE, D. C. (1972), *Thermodynamics of crystals* (Wiley, New York).
- WEIDNER, D. J. and G. SIMMONS (1972), *J. Geophys. Res.* **77**, 826.
- WHITE, G. K. (1965), *Proc. Roy. Soc. London A* **286**, 204.