

# Dispersion in Poroelastic Systems

*James G. Berryman*

## References

- Aki, K., and P. G. Richards, *Quantitative Seismology: Theory and Methods*, Volume 1, Freeman and Company, New York, 1980, pp. 170–177.
- Berryman, James G., 1980a, Long-wavelength propagation in composite elastic media I. Spherical inclusions, *J. Acoust. Soc. Am.* **68**, 1809–1819.
- Berryman, James G., 1980b, Long-wavelength propagation in composite elastic media I. Ellipsoidal inclusions, *J. Acoust. Soc. Am.* **68**, 1820–1831.
- Berryman, J. G., 1982, Effective medium theory for elastic composites, in: *Elastic Wave Scattering and Propagation*, edited by V. K. Varadan and V. V. Varadan (Ann Arbor Science, Ann Arbor, Michigan), pp. 111–129.
- Berryman, J. G., 1995, Mixture theories for rock properties, in: *Rock Physics and Phase Relations: A Handbook of Physical Constants*, edited by T. J. Ahrens (AGU, Washington, DC), pp. 205–228.
- Berryman, J. G., 1998, Transversely isotropic poroelasticity arising from thin isotropic layers, in: *Mathematics of Multiscale Materials*, K. M. Golden, G. R. Grimmett, R. D. James, G. W. Milton, and P. N. Sen (eds.), Springer, New York, pp. 37–50.
- Berryman, J. G., P. A. Berge, and B. P. Bonner, 2000, Transformation of seismic velocity data to extract porosity and saturation values for rocks, *J. Acoust. Soc. Am.* **107**, 3018–3027.
- Berryman, J. G., and H. F. Wang, 2000, Elastic wave propagation and attenuation in a double-porosity dual-permeability medium, *Intern. J. Rock Mech.* **37**, 63–78.
- Biot, M. A., 1962, Mechanics of deformation and acoustic propagation in porous media, *J. Appl. Phys.* **33**, 1482–1498.
- Biot, M. A., and D. G. Willis, 1957, The elastic coefficients of the theory of consolidation, *J. Appl. Mech.* **24**, 594–601.
- Brown, R. J. S., and J. Korringa, 1975, On the dependence of the elastic properties of a porous rock on the compressibility of the pore fluid, *Geophysics* **40**, 608–616.
- Budiansky, B., 1965, On the elastic moduli of some heterogeneous materials, *J. Mech. Phys. Solids* **13**, 223–227.
- Burridge, R., and J. B. Keller, 1981, Poroelasticity equations derived from microstructure, *J. Acoust. Soc. Am.* **70**, 1140–1146.

- Carroll, M. M., 1980, Mechanical response of fluid-saturated porous materials, in: *Theoretical and Applied Mechanics*, F. P. J. Rimrott and B. Tabarrok (eds.), Proceedings of the 15th International Congress of Theoretical and Applied Mechanics, Toronto, August 17–23, 1980, North-Holland, Amsterdam, 1980, pp. 251–262.
- Chin, R. C. Y., J. G. Berryman, and G. W. Hedstrom, 1985, Generalized ray expansion for pulse propagation and attenuation in fluid-saturated porous media, *Wave Motion* **7**, 43–66.
- Gassmann, F., 1951, Über die Elastizität poroser Medien, *Veitelsjahrsschrift der Naturforschenden Gesellschaft in Zürich* **96**, 1–23.
- Hashin, Z., and S. Shtrikman, 1961, Note on a variational approach to the theory of composite elastic materials, *J. Franklin Inst.* **271**, 336–341.
- Hill, R., 1965, A self-consistent mechanics of composite materials, *J. Mech. Phys. Solids* **13**, 213–222.
- Kaelin, B., and L. R. Johnson, 1998a, Dynamic composite elastic medium theory. Part I. One-dimensional media, *J. Appl. Phys.* **84**, 5451–5457.
- Kaelin, B., and L. R. Johnson, 1998b, Dynamic composite elastic medium theory. Part II. OThree-dimensional media, *J. Appl. Phys.* **84**, 5458–5468.
- Milton, G. W., 1985, The coherent potential approximation is a realizable effective medium scheme, *Comm. Math. Phys.* **99**, 463–500.
- Plona, T. J., 1980, Observation of a second bulk compressional wave in a porous medium at ultrasonic frequencies, *Appl. Phys. Lett.* **36**, 259–261.
- Schoenberg, M., and J. Douma, 1988, Elastic wave propagation in media with parallel fractures and aligned cracks, *Geophysical Prospecting* **54**, 571–590.
- Schoenberg, M., F. Muir, and C. Sayers, 1996, Introducing ANNIE: A simple three-parameter anisotropic velocity model for shales, *J. Seismic Exploration* **5**, 35–49.
- Skempton, A. W., 1954, The pore-pressure coefficients  $A$  and  $B$ , *Geotechnique* **4**, 143–147.
- Walpole, L. J., 1966a, On bounds for the overall elastic moduli of inhomogeneous systems I., *J. Mech. Phys. Solids* **14**, 151–162.
- Walpole, L. J., 1966b, On bounds for the overall elastic moduli of inhomogeneous systems II., *J. Mech. Phys. Solids* **14**, 289–301.
- Walpole, L. J., 1969, On the overall elastic moduli of composite materials, *J. Mech. Phys. Solids* **17**, 235–251.
- Watt, J. P., G. F. Davies, and R. J. O'Connell, 1976, Elastic properties of composite materials, *Rev. Geophys. Space* **14**, 541–563.