

# References

- AKI, K., & RICHARDS, P.G. 1980. *Quantitative Seismology: Theory and Methods*. W. H. Freeman and Co.
- AMENZADE, Y.A. 1976. *Theory of Elasticity*. Moscow: Vishaja Shkola. in Russian.
- ARCHIE, G.E. 1942. The electricak resistivity log as an aid in determining some reservoir characteristics. *Trans. Am. Inst. Min. Metall. Pet. Eng.*, **146**, 54–62.
- AULD, B.A. 1990. *Acoustic fields and waves in solids*. Robert E. Krieger Publ. Co.
- BAISCH, S., BOHNHOFF, M., CERANNA, L., TU, Y., & HARJES, H.-P. 2002. Probing the crust to 9 km depth: Fluid injection experiments and induced seismicity at the KTB superdeep drilling hole, Germany. *Bull. Seis. Soc. Am.*, **92**(6), 2369–2380.
- BAKULIN, A., GRECHKA, V., & TSVANKIN, I. 2000a. Estimation of fracture parameters from reflection seismic data. Part I: HTI model due to a single fracture set. *Geophysics*, **65**, 1788–1802.
- BAKULIN, A., GRECHKA, V., & TSVANKIN, I. 2000b. Estimation of fracture parameters from reflection seismic data. Part II: Fracture models with orthorombic symmetry. *Geophysics*, **65**, 1803–1817.
- BATZLE, M., & WANG, ZH. 1992. Seismic properties of pore fluids. *Geophysics*, **57**, 1396–1408.
- BERCKHEMER, H., RAUEN, A., WINTER, H., KERN, H., KONTNY, A., LIENERT, M., NOVER, G., PHL, J., POPP, T., SCHULT, A., ZINKE, J., & SOFFEL, H. C. 1997. Petrophysical properties of the 9-km-deep crustal section of the KTB. *J. Geophys. Res.*, **102**(B8), 18337–18361.
- BERRYMAN, J.G. 1979. Long-wave elastic anisotropy in transversely isotropic media. *Geophysics*, **44**, 896–917.
- BERRYMAN, J.G. 1992. Effective stress for transport properties of inhomogeneous porous rock. *J. Geophys. Res.*, **97**(B12), 17409–17424.
- BERRYMAN, J.G., & MILTON, G.W. 1991. Exact results for generalised Gassmann's equation in composite porous media with two constituents. *Geophysics*, **56**, 1950–1960.
- BIOT, M. A. 1940. The influence of initial stress on elastic waves. *Journal of Applied Physics*, **11**(8), 522–530.

## REFERENCES

---

- BIOT, M. A. 1941. General theory of three-dimensional consolidation. *Journal of Applied Physics*, **12**(2), 155–164.
- BIOT, M.A. 1956a. Theory of propagation of elastic waves in a fluid saturated porous solid. I. Low frequency range. *J. Acoust. Soc. Amer.*, **28**, 168–191.
- BIOT, M.A. 1956b. Theory of propagation of elastic waves in a fluid saturated porous solid. II. High frequency range. *J. Acoust. Soc. Amer.*, **28**, 168–191.
- BIOT, M.A. 1962. Mechanics of deformation and acoustic propagation in porous media. *J. Appl. Phys.*, **33**, 1482–1498.
- BOKELMANN, G. H. R., & HARJES, H.-P. 2000. Evidence for temporal variations of seismic velocity within the upper continental crust. *J. Geophys. Res.*, **105**(B10), 23879–23894.
- BRACE, W.F. 1965. Some new measurements of linear compressibility of rocks. *J. Geophys. Res.*, **70**, 391–398.
- BRACE, W.F., & ORANGE, A.S. 1968. Electrical resistivity changes in saturated rocks during fracture and frictional sliding. *J. Geophys. Res.*, **73**(4), 1433–1445.
- BRACE, W.F., ORANGE, A.S., & MADDEN, T.R. 1965. The effect of pressure on the electrical resistivity of water saturated crystalline rocks. *J. Geophys. Res.*, **70**, 5669–5678.
- BROWN, R., & KORRINGA, J. 1975. On the dependence of the elastic properties of a porous rock on the compressibility of the pore fluid. *Geophysics*, **40**, 168–178.
- BROWN, S.R. 1987. Fluid flow through rock joints: The effect of Surface roughness. *J. Geophys. Res.*, **92**(B2), 1337–1347.
- BRUCE, B., & BOWERS, G. 2002. Pore pressure terminology. *The Leading Edge*, **21**(2).
- BRUDY, M., ZOBACK, M. D., FUCHS, K., RUMMEL, F., & BAUMGÄRTNER, J. 1997. Estimation of the complete stress tensor to 8 km depth in the KTB scientific drill holes: Implications for crustal strength. *J. Geophys. Res.*, **102**(B8), 18453–18475.
- BUSKE, S. 1999. 3-D prestack Kirchhoff migration of the ISO89-3D data set. *Pure and Applied Geophysics*, 157–171.
- CARCIONE, J.M., & CAVALLINI, F. 2002. Poisson's ratio at high pore pressure. *Geophysical Prospecting*, **50**, 97–106.
- CARCIONE, J.M., & TINVILLA, U. 2001. The seismic response to overpressure: a modelling study based on laboratory, well and seismic data. *Geophysical Prospecting*, **49**, 523–539.
- DAILY, W.D., & LIN, W. 1985. Laboratory-determined transport properties of Berea sandstone. *Geophysics*, **50**(5), 775–784.

- DETOURNAY, E., & CHENG, A.-D. 1993. Fundamentals of poroelasticity. *Chap. 5 of: HUDSON, J. (ed), Comprehensive Rock Engineering: Principles, Practice, and Projects.* Oxford: Pergamon Press.
- DOMENICO, S.N. 1984. Rock lithologie and porosity determination from shear and compressional wave velocities. *Geophysics*, **49**(8), 1188–1195.
- DUFFY, J., & MINDLIN, R.D. 1957. Stress-strain relations and vibrations of a granular medium. *J. Appl. Mech.*, **24**, 585–593.
- DURHAM, W. B. 1997. Laboritory observation of the hydraulic behaviour of a permeable fracture from 3800 m depth in the KTB pilot hole. *J. Geophys. Res.*, **102**(B8), 18405–18416.
- DUTTA, N.C. 2002. Geopressure prediction using seismic data: Current status and the road ahead. *Geophysics*, **67**(6).
- DVORKIN, J., & NUR, A. 1993. Dynamic poroelasticity: a unified model with the squirt and the Biot mechanism. *Geophysics*, **58**, 524–533.
- DVORKIN, J., NOLEN-HOEKSEMA, R., & NUR, A. 1994. The squirt flow mechanism: macroscopic description. *Geophysics*, **59**, 428–438.
- DVORKIN, J., NUR, A., & CHAIKA, C. 1996. Stress sensitivity of sandstones. *Geophysics*, **61**(2), 444–455.
- EBERHART-PHILLIPS, D., & MICHAEL, A.J. 1993. Three-dimensional velocity structure, seismicity, and fault structure in the Parkfield region, Central California. *J. Geophys. Res.*, **98**(B9), 15737–15758.
- EBERHART-PHILLIPS, D., HAN, D-H., & ZOBACK, M.D. 1989. Empirical relationship among seismic velocity, effective pressure, and clay content in sandstones. *Geophysics*, **54**(1), 82–89.
- EMMERMANN, R., & LAUTERJUNG, J. 1997. The German Continental Deep Drilling Program KTB. *J. Geophys. Res.*, **102**(B8), 18179–18201.
- ENGESER, B.E., KESSELS, W., KÜCK, J., & WOHLGEMUTH, L. 1993. *The 6000 m hydrofrac test in the KTB main hole – Design, implementation and preliminary results.* KTB-Rep. 93-1. Niedersächsisches Landesamt für Bodenforschung, Hannover.
- ERZINGER, J., KÜMPEL, H.-J., RABELL, W., SHAPIRO, S. A., & PRODUCTION TEST SCIENCE TEAM, KTB-VB. 2003. Energy and Fluid Transport in Continental Fault Systems 1<sup>st</sup> Phase: Fluid Production Test in the KTB Pilot Hole. In: *Gemeinsames Schwerpunkt kolloquium ICDP-ODP*.
- FREUND, D. 1992. Ultrasonic compressional and shear velocity in dry elastic rocks as a function of porosity, clay contant and confining pressure. *Geophys. J. Int.*, **108**, 125–135.
- GANGI, A. F., & CARLSON, R. 1996. An asperity-deformation model for effective pressure. *Tectonophysics*, **256**, 241–251.

## REFERENCES

---

- GANGI, A.F. 1978. Variation of whole and fractured porous rock permeability with confining stress. *Int. J. Rock. Mech. Min. Sci.*, **15**, 249–257.
- GAASSMANN, F. 1951. Über die Elastizität poröser Medien. *Vierteljahrsschrift der Naturforschenden Gesellschaft in Zürich*, **96**, 1–23.
- GOULTY, N.R. 1998. Relationship between porosity and effective stress in shales. *First Break*, **16**, 413–419.
- GRÄSLE, W., & KESSELS, W. 2003. Three dimensional modeling of fluid movement and transport of fluid components in the SE1 and SE2 fault zones driven by processes on a regional scale. In: *Gemeinsames Schwerpunktakolloquium ICDP-ODP*.
- HARJES, H.-P., BRAM, K., DÜRBAUM, H.-J., GEBRANDE, H., HIRSCHMANN, G., JANIK, M., KLÖCKNER, M., LÜSCHEN, E. AND RABELL, W., SIMON, M., THOMAS, R., TORMANN, J., & WENZEL, F. 1997. Origin and nature of crustal reflections: Results from integrated seismic measurements at the KTB superdeep drilling site. *J. Geophys. Res.*, **102**(B8), 18267–18288.
- HASHIN, Z., & SHTRIKMAN, S. 1963. A variational approach to the elastic behaviour of multiphase material. *J. Mech. Phys. Solids*, **11**, 127–140.
- HEARMON, R.F.S. 1953. 'Third-order' elastic coefficients. *Acta Cryst.*, **6**, 331–340.
- HUDSON, J. A. 1981. Wave speed and attenuation of elastic waves in material containing cracks. *Geophys. J. R. Astron. Soc.*, **64**, 133–150.
- HUDSON, J.A., POINTER, T., & LIU, E. 2001. Effective-medium theories for fluid-saturated materials with aligned cracks. *Geophysical Prospecting*, **49**, 509–522.
- HUENGES, E. 1993. Profiles of permeability and formation pressure down to 7.2 km. *KTB Rep.*, **93-2**, 279–285.
- HUENGES, E., ERZINGER, J., KÜCK, J., ENGESER, B., & KESSELS, W. 1997. The permeable crust: Geohydraulic properties down to 9101 m depth. *J. Geophys. Res.*, **102**(B8), 18255–18265.
- ITO, T., & ZOBACK, M.D. 2000. Fracture permeability and in situ stress to 7 km depth in the KTB Scientific Drillhole. *Geophys. Res. Letters*, **27**(7), 1048–1051.
- JOHNSON, P. A., & RASOLOFOSAON, P. N. 1996. Nonlinear elasticity and stress-induced anisotropy in rocks. *J. Geophys. Res.*, 3113–3124.
- JONES, S.M. 1995. Velocities and quality factors of sedimentary rocks at low and high effective pressure. *Geophys. J. Int.*, **123**, 774–780.
- KASELOW, A., & SHAPIRO, S.A. 2003a. Application of the Piezosensitivity Approach: Changes of elastic moduli of isotropic and anisotropic porous rocks under isostatic load. *73rd Ann. Internat. Mtg., Soc. Expl. Geophys, Exp. Abstr., Dallas*.
- KASELOW, A., & SHAPIRO, S.A. 2003b. Elastic properties of anisotropic rocks under hydrostatic load. *EAGE 65th Conference & Exhibition, Exp. Abstr., Stavanger*.
- KASELOW, A., & SHAPIRO, S.A. 2004. Stress sensitivity of elastic moduli and electrical resistivity in porous rocks. *J. Geophys. Eng.*, **1**(1), 1–11.

- KERN, H. 1982. P- and S-wave velocities in crustal and mantle rocks under the simultaneous action of high confining pressure and high temperature and the effect of the rock microstructure. *Pages 15–45 of: SCHREYER, W. (ed), High-Pressure Researches in Geoscience.* Schweizerbart'sche Verlagsbuchhandlung.
- KERN, H., & SCHMIDT, R. 1990. Physical properties of the KTB core samples at simulated in situ conditions. *Scientific Drilling*, **1**, 217–223.
- KERN, H., SCHMIDT, R., & POPP, T. 1991. The velocity and density structure of the 4000 m crustal segment of the KTB drilling site and their relation to lithological and microstructural characteristics of the rock: an experimental approach. *Scientific Drilling*, **2**, 130–145.
- KERN, H., POPP, T., & SCHMIDT, R. 1994. The effect of deviatoric stress on the rock properties: an experimental study simulating the in-situ stress field at the KTB drilling site, Germany. *Surv. Geophys.*, **15**, 467–479.
- KESSELS, W. 1991. Objectives and execution of hydraulic experiments int the KTB-Oberpfalz borehole within the long-term measurment and test programs in the continental deep drilling pilot hole. *Scientific Drilling*, **2**, 287–298.
- KESSELS, W., & KÜCK, J. 1995. Hydraulic communication in crystalline rocks between the two boreholes of the Continental Deep Drilling Program in Germany. *Int. J. Rock Mech. Min. Sci. Geomech. Abstr.*, **32**, 37–47.
- KHAKSAR, A., GRIFFITHS, C. M., & MCCANN, C. 1999. Compressional- and shear-wave velocities as a function of confining stress in dry sandstones. *Geophysical Prospecting*, **47**, 487–508.
- KIRSTETTER, O., & MACBETH, C. 2001. Compliance-based interpretation of dry frame pressure sensitivity in shallow marine sandstones. *Ann. Internat. Mtg., Soc. Expl. Geophys., Exp. Abstr., San Antonio*, 2132–2135.
- LANDRØ, M. 2001. Discrimination between pressure and fluid saturation changes from time-lapse seismic data. *Geophysics*, **66**(3), 836–844.
- LO, T., COYNER, K.B., & TOKSÖZ, M.N. 1986. Experimental determination of elastic anisotropy of Berea sandstone, Chicopee shale and Chelmsford granite. *Geophysics*, **51**(1), 166–171.
- LOCKNER, D.A., & BYERLEE, J.D. 1985. Complex resistivity measurements of confined rocks. *J. Geophys. Res.*, **90**(B9).
- LODEMANN, M., FRITZ, P., WOLF, M., HANSEN, B.T., IVANOVICH, N., & NOLTE, E. 1997. On the origin of the saline fluids in the KTB (Continental Deep Drilling Program of Germany). *Appl. Geochem.*
- LÜSCHEN, E., BRAM, K., SÖLLNER, W., & SOBOLEV, S. 1996. Nature of seismic reflections and velocities from VSP-experiments and borehole measurements at the KTB-deep drilliing site in SE-Germany. *Tectonophysics*, **264**, 309–316.
- MAVKO, G., & JIZBA, D. 1991. Estimating grain-scale fluid effects on velocity dispersion in rocks. *Geophysics*, 1940–1949.

## REFERENCES

---

- MAVKO, G., MUKERJI, T., & GODFREY, N. 1995. Predicting stress-induced velocity anisotropy in rocks. *Geophysics*, **60**(4), 1081–1087.
- MAVKO, G., MUKERJI, T., & DVORKIN, J. 1998. *The Rock Physics Handbook*. Cambridge University Press.
- MERKEL, R.H., BARREE, R.D., & TOWLE, G. 2001. Seismic response of Gulf of Mexico reservoir rocks with variations in pressure and water saturation. *The Leading Edge*, **20**, 290–299.
- MESSINGER, H., & LANGENSCHEIDT-REDAKTION (eds). 2001. *Langenscheidts Handwörterbuch Englisch*. Berlin und München: Langenscheidt.
- MÖLLER, P., WEISE, S.M., ALTHAUS, E., BACH, W., BEHR, J.H., ERZINGER, J., FABER, E., HANSEN, B.T., HOERN, E.E., HUENGES, E., KÄMPF, H., KESSELS, W., KIRSTEN, T., LANDWEHR, D., LODEMANN, M., MACHON, L., PEKDEGER, A., PIELOW, H.-U., REUTEL, C., WALThER, K., WEINLICH, F.H., & ZIMMER, M. 1997. Paleofluids and recent fluids in the upper continental crust: Results from the German Continental Deep Drilling Program. *J. Geophys. Res.*, **102**(B8), 18233–18254.
- MORROW, C., LOCKNER, D., HICKMAN, S., RUSANOV, M., & RÖCKEL, T. 1994. Effects of lithology and depth on the permeability of core samples from the Kola and KTB drillholes. *J. Geophys. Res.*, **99**.
- MURPHY, W.F., SCHWARTZ, L.M., & HORNBY, B. 1991. Interpretation physics of Vp and Vs in sedimentary rocks. In: *SPWLA 32 Annual Logging Symposium*.
- MUSGRAVE, M. J.P. 1970. *Crystal acoustics*. Holden Day.
- O'BRIEN, P. J., DUYSTER, J., GRAUERT, B., SCHREYER, W., STÖCKHERT, B., & WEBER, K. 1997. Crustal evolution of the KTB drill site: From oldest relics to the Herzynian granites. *J. Geophys. Res.*, **102**(B8), 18203–18220.
- OLHOEFT, G.R. 1980. Electrical properties of rocks. In: TOULOUKIAN, Y.S., JUDD, W.R., & ROY, R.F. (eds), *Physical Properties of Rocks and Minerals*. New York: McGraw-Hill.
- PARKHOMENKO, E.I. 1982. Electrical resistivity of minerals and rocks at high temperature and pressure. *Rev. Geophys. Space Phys.*, **20**, 193–218.
- PECHNIG, R., HAVERKAMP, S., WOHLENBERG, H., ZIMMERMANN, G., & BURKHARDT, H. 1997. Integrated log interpretation in the German Continental Deep Drilling Program: Lithology, porosity and, fracture zones. *J. Geophys. Res.*, **102**(B8), 18363–18390.
- PEKDEGER, A., SOMMER-VON JARMERSTEDT, C., & THOMAS, L. 1994. Hydrochemical sampling of the formation water at the KTB-borehole and their chemical composition. *Scientific Drilling*, **4**, 101–111.
- POPP, T. 1994. *Der Einfluss von Gesteinsmarix, Mikrorissgefüge und intergranularen Fluiden auf die elastischen Wellengeschwindigkeiten und die elektrische Leitfähigkeit krustenrelevanter Gesteine unter PT-Bedingungen*. Ph.D. thesis, Kiel University, Kiel.

- PRASAD, M., & MANGHNANI, M.H. 1997. Effects of pore and differential pressure on compressional wave velocity and quality factor in Berea and Michigan sandstones. *Geophysics*, 1163–1176.
- PRESS, W.H., TEUKOLSKY, S.A., VETTERLING, W.T., & FLANNERY, B.P. 2002. *Numerical Recipes in C++*. 2. edn. Cambridge University Press.
- PRIOUL, R., BAKULIN, A., & BAKULIN, V. 2001. Three-parameter model for predicting acoustic velocities in transversely isotropic rocks under arbitrary stress. *71. Ann. Intern. Mtg. Soc. Expl. Geophys. Expanded Abstracts*, 1732–1735.
- RASOLOFOSAON, P. 1998. Stress-induced seismic anisotropy revisited. *Revue de L’Institut Francais du Petrole*, **53**, 679–693.
- RAVEN, K.G., & GALE, J.E. 1985. Water flow in a natural rock fracture as a function of stess and sample size. *Int. J. Rock. Mech. Min. Sci.*, **22**(4), 251–261.
- RINDSCHWENTNER, J. 2001. *Estimating the Global Permeability Tensor using Hydraulically Induced Seismicity*. M.Phil. thesis, Freie Universität Berlin.
- ROTHERT, E., SHAPIRO, S.A., BUSKE, S., & BOHNHOFF, M. 2003. Mutual relationship between microseismicity and seismic reflectivity: Case study at the German Continental Deep Drilling Site (KTB). *Geophys. Res. Lett.*, **30**(17).
- SARKAR, D., BAKULIN, A., & KRANTZ, R. L. 2003. Anisotropic inversion of seismic data for stressed media: Theory and a physical-modeling study on Berea sandstone. *Geophysics*, **68**(2), 690–704.
- SHAPIRO, S. A., & KASELOW, A. 2002. On the stress dependence of seismic velocities in porous rocks. *72th Ann. Internat. Mtg., Soc. Expl. Geophys, Expanded Abstracts*.
- SHAPIRO, S. A., & KASELOW, A. 2003. Porosity and elastic anisotropy of rocks under tectonic stresses and pore pressure changes. *submitted to Geophysics*.
- SHAPIRO, S.A. 2003. Piezosensitivity of porous and fractured rocks. *Geophysics*, **68**(2), 482–486.
- SHAPIRO, S.A., HUENGES, E., & BORM, G. 1997. Estimating the permeability from fluid-injection-induced seismic emissssions at the KTB site. *Geophys. J. Int.*, **131**, F15–F18.
- SIEGESMUND, S., VOLLBRECHT, A., CHLUPAC, T., NOVER, G., DÜRRAST, H., MÜLLER, J., & WEBER, K. 1993a. Fabric-controlled anisotropy of petrophysical properties observed in KTB core samples. *Scientific Drilling*, **4**, 31–54.
- SIEGESMUND, S., VOLLBRECHT, A., & PROS, Z. 1993b. Fabric changes and their influence on P-wave velocity pattern: Examples from a polyphase deformed orthogneisses. *Tectonophysics*, **225**, 477–492.
- STOBER, I. 2003. Hydrochemical and hydraulic properties of the continental upper crust at the KTB site, first results. In: *Gemeinsames Schwerpunktrolloquium ICDP-ODP*.

## REFERENCES

---

- TERZAGHI, K. 1936. The shearing resistance of saturated soils and the angle between the planes of shear. *Pages 54–56 of: Proceedings of International Conference on Soil Mechanics and Foundation Engeneering.*, vol. 1. Cambridge, Mass.: Harvard University Press.
- TERZAGHI, K. 1943. *Theoretical soil mechanics*. New York: Wiley.
- THOMSEN, L. 1986. Weak elastic anisotropy. *Geophysics*, **51**(10), 1954–1966.
- THOMSEN, L. 1995. Elastic anisotropy due to aligned cracks in porous media. *Geophys. Prosp.*, **45**, 805–829.
- THOMSEN, L. 2002. *Understanding seismic anisotropy in exploration and exploitation*. Distinguished Instructor Series, no. 5. Soc. of Expl. Geophys.
- THORNE, L., & WALLACE, T.C. 1995. *Modern Global Seismology*. Academic Press.
- THURSTON, R.N. 1974. Waves in Solids. *Pages 109–308 of: FLÜGGE, S. (ed), Mechanics of Solids*. Encyclopedia of physics, vol. VIa, no. 4. Berlin-Heidelberg-New York: Springer-Verlag.
- TSANG, Y.W., & WITHERSPOON, P.A. 1981. The dependence of fracture mechanical and fluid flow properties on fracture roughness and sample size. *J. Geophys. Res.*, **88**(B3), 2359–2366.
- TSVANKIN, I. 1997. Anisotropic parameters and P-wave velocities for orthorombic media. *Geophysics*, **62**(4), 1292–1309.
- TSVANKIN, I. 2001. *Seismic signatures and analysis of reflection data in anisotropic media*. Handbook of geophysical exploration: seismic exploration, vol. 29. Pergamon.
- WAGNER, G. A., COYLE, D. A., DUYSTER, J., HENJES-KUNST, F., PETEREK, A., SCHRÖDER, B., STÖCKHERT, B., WEMMER, K., ZULAUF, G., AHRENDT, H., BISCHOFF, R., HEJL, E., JACOBS, J., MENZEL, D., LAL, NAND, VAN DEN HAUTE, P., VERCOUTERE, C., & WELZEL, B. 1997. Post-Variscan thermal and tectonical evolution of the KTB site and its surrounding. *J. Geophys. Res.*, **102**(B8), 18221–18232.
- WANG, Z. 2001. Fundamentals of seismic rock physics. *Geophysics*, **66**(2).
- WILT, M., & ALUMBAUGH, D. 1998. Electromagnetic methods for development and production: State of the art. *The Leading Edge*, **17**, 487–490.
- WINKLER, K.W., & LIU, X. 1996. Measurements of third-order elastic constants in rocks. *J. Acoust. Soc. Am.*, **100**, 1392–1398.
- WYLLIE, M.R.J. 1963. *The Fundamentals of Well Log Interpretation*. 3rd edn. New York: Academic Press.
- ZIMMERMAN, R.W., SOMERTON, W.H., & KING, M.S. 1986. Compressibility of porous rocks. *J. Geophys. Res.*, **91**, 12765–12777.
- ZINKE, J. 1996. Mikrorissuntersuchungen an KTB Bohrkernen: Beziehungen zu den elastischen Gesteinsparametern. *Frankf. Geowiss. Arb.*, **A-13**, 204.