

References:

- Adam, D.P., Correlations of the Clear Lake, California core CL-73-4 pollen sequence with other long records, *Geological Society of America Special Paper*, 214, 81-95, 1988.
- Akimoto, S., Magnetic properties of FeO–Fe₂O₃–TiO₂ system as a basis of rock magnetism, *Journal of the Physical Society of Japan*, 17 (suppl. B1), 706–710, 1962.
- Almquist-Jacobson, H., J.E. Almendinger, and S. Hobbie, Influence of terrestrial vegetation on sediment-forming processes in kettle lakes of west-central Minnesota, *Quaternary Research*, 38, 103-116, 1992.
- Anderson, N.J., and B. Rippey, Diagenesis of magnetic minerals in the recent sediments of a eutrophic lake, *Limnology and Oceanography*, 33, 1476-1492, 1988.
- Aragón, R., D.J. Buttrey, J.P. Shepherd, and J.M. Honig, Influence of nonstoichiometry on the Verwey transition., *Physical Review*, 31 (B), 430-436, 1985.
- Argyle, K.S., and D.J. Dunlop, Theoretical domain structure in multi-domain magnetite particles, *Geophysical Research Letters*, 11, 185-188, 1984.
- Bando, Y., M. Kiyama, N. Yamamoto, T. Takada, T. Shinjo, and H. Takaki, Magnetic properties of α -Fe₂O₃ fine particles, *Journal of the Physical Society of Japan*, 20, 2086, 1965.
- Banerjee, S.K., New grain size limits for paleomagnetic stability in hematite, *Nature*, 232, 15-16, 1971.
- Banerjee, S.K., Contributions of fine-particle magnetism to reading the global paleoclimate record, *Journal of Applied Physics*, 75, 5925–5930, 1994.
- Banerjee, S.K., C.P. Hunt, and X.-M. Liu, Separation of local signals from the regional paleomonsoon record of the Chinese loess plateau: A Rock magnetic approach, *Geophysical Research Letters*, 20 (9), 843-846, 1993.
- Banerjee, S.K., E.A. Oches, and P.A. Solheid, Magnetic properties reveal sub-orbital climate change periodicities in Alaskan loess, *EOS Transactions*, 78, F23, 1997.
- Bartlein, P.J., I.C. Prentice, and T. Webb Iii, Climatic response surfaces from pollen data for some eastern North American taxa, *Journal of Biogeography*, 13, 35-57, 1986.
- Bartlein, P.J., and C. Whitlock, Paleoclimatic interpretation of the Elk Lake pollen record, *Elk Lake, Minnesota: evidence for rapid climate change in the north-central United States*, 275-293, 1993.
- Begét, J., Middle Wisconsinian climate fluctuations recorded in Central Alaskan loess, *Géographie physique et Quaternaire*, 44 (n°1), 3-13, 1990.
- Begét, J.E., and D.B. Hawkins, Influence of orbital parameters on Pleistocene loess deposition in central Alaska., *Nature*, 337, 151-153, 1989.
- Behl, R.J., and J.P. Kennett, Brief interstadial events in the Santa Barbara basin, NE Pacific, during the past 60 kyr, *Nature*, 379, 243-246, 1996.

- Behre, K.E., and U. Lade, Eine Folge von Eem und 4 Weichsel-Interstadialen in Oerel/Niedersachsen und ihr Vegetationsablauf, *Eiszeitalter und Gegenwart*, 36, 11-36, 1986.
- Berner, R.A., The role of magnesium in the crystal growth of calcite and aragonite from sea water, *Geochimica et Cosmochimica Acta*, 39, 489-504, 1975.
- Berner, R.A., Sulphate reduction, organic matter decomposition and pyrite formation, *Philosophical Transactions of the Royal Society, London, Ser. A*, 315, 25-38, 1985.
- Birkeland, P.W., *Soils and Geomorphology*, 372 pp., Oxford University Press, New York, 1984.
- Birks, H.J.B., and A.D. Gordon, *Numerical Methods in Quaternary Pollen Analysis*, Academic Press, London, 1985.
- Bloemendal, J., and P. de Menocal, Evidence for a change in the periodicity of tropical climate cycles at 2.4 Myr from whole-core magnetic susceptibility measurements, *Nature*, 342, 897-900, 1989.
- Bloemendal, J., J.W. King, F.R. Hall, and S.-H. Doh, Rock magnetism of Late-Neogene and Pleistocene deep-sea sediments: Relationship to sediment source, diagenetic processes, and sediment lithology, *Journal of Geophysical Research*, 97, 4361-4375, 1992.
- Bloemendal, J., J.W. King, A. Hunt, P.B. deMenocal, and A. Hayashida, Origin of the sedimentary magnetic record at Ocean Drilling Program sites on the Owen Ridge, western Arabian Sea, *Journal of Geophysical Research*, 98, 4199-4219, 1993.
- Botz, R., P. Stoffers, E. Faber, and K. Tietze, Isotope geochemistry of carbonate sediments from Lake Kivu (east-Central Africa), *Chemical Geology*, 69, 299-308, 1988.
- Broecker, W., Future directions of paleoclimate research, *Quaternary Science Reviews*, 16, 821-825, 1997.
- Brugam, R.B., Postglacial diatom stratigraphy of Kirchner Marsh, Minnesota, *Quaternary Research*, 13, 133-146, 1980.
- Büdel, J., Die räumliche und zeitliche Gliederung des Eiszeitklimas, *Naturwissenschaften*, 36, 105-112, 1949.
- Burns, J.A., Mid-Wisconsinan vertebrates and their environment from January Cave, Alberta, Canada, *Quaternary Research*, 35, 130-143, 1991.
- Butler, R.F., and S.K. Banerjee, Theoretical single-domain grain size range in magnetite and titanomagnetite, *Journal of Geophysical Research*, 80 (29), 4049-4058, 1975.
- Campbell, I.D., and C. Campbell, Pollen preservation: experimental wet-dry cycles in saline and desalinated sediments, *Palynology*, 18, 5-10, 1994.
- Canfield, D.E., and R.A. Berner, Dissolution and pyritization of magnetite in anoxic marine sediments, *Geochimica et Cosmochimica Acta*, 51, 645-659, 1987.
- Carrol, D., Clay minerals: A guide to their X-ray identification., *The Geological Society of America, Special Paper*, 126, 80, 1970.

- Carter, D.L., M.D. Heilman, and C.L. CGonzales, Ethylene glycol monoethyl ether for determining surface area of silicate minerals, *Soil Science*, 100, 356-360, 1965.
- Carter, D.L., M.M. Mortland, and W.D. Kemper, Specific Surface, in *Methods of Soil Analysis, Part 1. Physical and Mineralogical Methods*, edited by Klute, pp. 413-423, Am. Soc. of Agronomy, Soil Sci. Soc. Am., 1986.
- Channell, J.E.T., and C. Mc Cabe, Comparison of magnetic hysteresis parameters of unremagnetized and remagnetized limestones., *Journal of Geophysical Research*, 99 (B3), 4613-4623, 1994.
- Charlesworth, S.M., and J.A. Lees, The use of mineral magnetic measurements in polluted urban lakes and deposited dusts, Coventry, U.K., *Physics and Chemistry of the Earth*, 22, 203-206, 1997.
- Chivas, A.R., P. De Deckker, and J.M.G. Shelley, Magnesium content of non-marine ostracod shells: a new palaeosalinometer and palaeothermometer, *Palaeogeography, Palaeoclimatology, Palaeoecology*, 54, 43-61, 1986.
- Chivas, A.R., P. De Deckker, and J.M.G. Shelly, Strontium content of ostracods indicates lacustrine palaeosalinity, *Nature*, 316, 251-253, 1985.
- Churchman, G.J., C.M. Burke, and R.L. Parfitt, Comparison of various methods for the determination of specific surfaces of subsoils, *Journal of Soil Science*, 42, 449-461, 1991.
- Cihacek, L.J., and J.M. Bremner, A simplified ethylene glycol monoethyl ether procedure for assessment of soil surface area, *Soil Science*, 43, 821-822, 1979.
- Curry, B.B., Late-Pleistocene lithofacies, paleolimnology and ostracod fauna of kettles on the Illinoian till plain, Illinois, USA, PhD thesis, University of Illinois at Urbana -Champaign, 1995.
- Curry, B.B., T.F. Anderson, and K.C. Lohmann, Unusual carbon and oxygen isotopic ratios of ostracodal calcite from last interglacial (Sangamon episode) lacustrine sediment in Raymond Basin, Illinois, USA, *Journal of Paleolimnology*, 17, 421-435, 1997.
- Curry, B.B., and M.J. Pavich, Absence of glaciation in Illinois during marine isotope stages 3 through 5, *Quaternary Research*, 46, 19-26, 1996.
- Curry, W.B., and D.W. Oppo, Synchronous, high-frequency oscillations in tropical sea surface temperatures and North Atlantic deep water production during the last glacial cycle, *Paleoceanography*, 12, 1-14, 1997.
- Curtis, C., Mineralogical consequences of organic matter degradation in sediments: inorganic/organic diagenesis, in *Marine clastic sedimentology*, edited by J.K. Leggett, and G.G. Zuffa, pp. 108-123, Graham and Trotman, London, 1987.
- Cushing, E.J., Evidence for differential pollen preservation in Late-Quaternary sediments in Minnesota, *Review of Paleobotany and Palynology*, 4, 87-101, 1967.
- Day, R., M. Fuller, and V.A. Schmidt, Hysteresis properties of titanomagnetites: Grain-size and compositional dependence, *Physics of the Earth and Planetary Interiors*, 13, 260-267, 1977.

- Dean, W.E., Determination of carbonate and organic matter in calcareous sediments and sedimentary rocks by loss on ignition: comparison with other methods, *Journal of Sedimentary Petrology*, 44, 242-248, 1974.
- Dean, W.E., Physical properties, mineralogy and geochemistry of Holocene varved sediments from Elk Lake, Minnesota, *Geological Society of America Special Paper*, 276, 135-157, 1993.
- Dearing, J.A., Sedimentary indicators of lake-level changes in the humid temperate zone: a critical review, *Journal of Paleolimnology*, 18, 1-14, 1997.
- Dearing, J.A., P.M. Bird, R.J.L. Dann, and S.F. Benjamin, Secondary ferrimagnetic minerals in Welsh soils: a comparison of mineral magnetic detection methods and implications for mineral formation, *Geophysical Journal International*, 130, 727-736, 1997.
- Dearing, J.A., R.J.L. Dann, K. Hay, J.A. Lees, P.J. Loveland, B.A. Maher, and K. O'Grady, Frequency-dependent susceptibility measurements of environmental materials, *Geophysical Journal International*, 124, 228-240, 1996a.
- Dearing, J.A., K.L. Hay, S.M.J. Baban, A.S. Huddleston, E.M.H. Wellington, and P.J. Loveland, Magnetic susceptibility of soil: an evaluation of conflicting theories using a national data set, *Geophysical Journal International*, 127, 728-734, 1996b.
- Dekkers, M., J., Magnetic behavior of natural goethite during thermal demagnetization, *Geophysical Research Letters*, 20 (16), 538-541, 1988a.
- Dekkers, M., and P. Rochette, Magnetic properties of chemical remanent magnetization in synthetic and natural goethite: prospects for a natural remanent magnetization/thermoremanent magnetization ratio paleomagnetic stability test., *Journal of Geophysical Research*, 97 (B12), 17291-17307, 1992.
- Dekkers, M.J., Magnetic properties of natural pyrrhotite Part I: Behaviour of initial susceptibility and saturation-magnetization-related Rock magnetic parameters in a grain-size dependent framework., *Physics of the Earth and Planetary Interiors*, 52, 376-393, 1988b.
- Dekkers, M.J., Magnetic properties of natural pyrrhotite. II. High- and low-temperature behaviour of J_{rs} and TRM as a function of grain size., *Physics of the Earth and Planetary Interiors*, 57, 266-283, 1989.
- Dorale, J.A., R.L. Edwards, E. Ito, and L.A. Gonzales, Climate and vegetation history of the midcontinent for 75 to 22 ka: A speleothem record from Crevice cave, Missouri, U.S.A., *Science*, 282, 1871-1874, 1998.
- Dunlop, D.J., Superparamagnetic and single-domain threshold sizes in magnetite, *Journal of Geophysical Research*, 78, 1780-1793, 1973a.
- Dunlop, D.J., Thermoremanent magnetization in submicroscopic magnetite, *Journal of Geophysical Research*, 78, 7602-7613, 1973b.

- Dunlop, D.J., The rock magnetism of fine particles, *Physics of the Earth and Planetary Interiors*, 26, 1-26, 1981.
- Dunlop, D.J., Hysteresis properties and their dependence on particle size: A test of pseudo-single-domain remanence models, *Journal of Geophysical Research*, 91 (B9), 9569-9584, 1986.
- Dunlop, D.J., and M.-M. Bina, The coercive force spectrum of magnetite at high temperatures: Evidence for thermal activation below the blocking temperature, *Geophysical Journal of the Royal Astronomical Society*, 51, 121-147, 1977.
- Dunlop, D.J., and Ö. Özdemir, *Rock Magnetism, Fundamentals and Frontiers*, 573 pp., Cambridge University Press, Cambridge, New York, 1997.
- Eltantawy, I.M., and P.W. Arnold, Reappraisal of ethylene glycol mono-ethyl ether (EGME) method for surface area estimations of clays, *Journal of Soil Science*, 24, 232-238, 1973.
- Engstrom, D.R., and S.R. Nelson, Paleosalinity from trace metals in fossil ostracods compared with observational records at Devils Lake, North Dakota, USA, *Palaeogeography, Palaeoclimatology, Palaeoecology*, 83, 295-312, 1991.
- Enkin, R.J., and W. Williams, Three-dimensional micromagnetic analysis of stability in fine magnetic grains, *Journal of Geophysical Research*, 99, 611-618, 1994.
- Evans, M.E., and F. Heller, Magnetic enhancement and paleoclimate: study of a loess/paleosol couplet across the loess plateau of China, *Geophysical Journal International*, 117, 257-264, 1994.
- Eyre, J., Frequency dependence of magnetic susceptibility for populations of single-domain-grains, *Geophysical Journal International*, 129, 209-211, 1997.
- Fassbinder, J.W.E., and H. Stanjek, Magnetic properties of biogenic soil greigite., *Geophysical Research Letters*, 21 (22), 2349-2352, 1994.
- Fassbinder, J.W.E., H. Stanjek, and H. Vali, Occurrence of magnetic bacteria in soil, *Nature*, 343, 161-163, 1990.
- Field, M.H., B. Huntley, and H. Müller, Eemian climate fluctuations observed in a European pollen record., *Nature*, 371, 779-783, 1994.
- Fine, P., and M.J. Singer, Contribution of ferrimagnetic minerals to oxalate and dithionite-extractable iron, *Journal of the American Society of Soil Science*, 53, 191-196, 1989.
- Fine, P., M.J. Singer, R. La Ven, K. Verosub, and R.J. Southard, Role of pedogenesis in distribution of magnetic susceptibility in two California chronosequences., *Geoderma*, 44, 287-306, 1989.
- Fine, P., k.L. Verosub, and M.J. Singer, Pedogenic and lithogenic contributions to the magnetic susceptibility record of the Chinese loess/paleosol sequence., *Geophysical Journal International*, 122, 97-107, 1995.
- Flanders, P.J., Collection, measurement, and analysis of airborne magnetic particulates from pollution in the environment, *Journal of Applied Physics*, 75, 5931-5936, 1994.

- Florin, B.-B., and H.E. Wright, Diatom evidence for the persistence of stagnant glacial ice in Minnesota, *Geological Society of America Bulletin*, 80, 695-704, 1969.
- Follmer, L.R., The Sangamon soil in its type area - a review, in *Quaternary Soils*, edited by W.C. Mahaney, Norwich, 1978.
- Follmer, L.R., Sangamon and Wisconsinan pedogenesis in the midwestern United States, in *Late-Quaternary Environments of the United States*, edited by S.C. Porter, pp. 138-144, University of Minnesota Press, Minneapolis, 1983.
- Garrels, R.M., and C.L. Christ, *Solutions, Minerals and Equilibria*, 450 pp., Jones and Bartlett, Boston, 1990.
- Geiss, C.E., and S.K. Banerjee, Advantages of a multi parameter approach for the interpretation of magnetic records from small lakes, *Annales Geophysicae Supplement*, 15, 1997a.
- Geiss, C.E., and S.K. Banerjee, A multi-parameter rock magnetic record of the last glacial-interglacial paleoclimate from south-central Illinois, USA, *Earth and Planetary Science Letters*, 152, 203-216, 1997b.
- Geiss, C.E., and S.K. Banerjee, Comparison of two interglacial records from the midwestern U.S.A., *Physics and Chemistry of the Earth*, in press.
- Geiss, C.E., F. Heider, and H.C. Soffel, Magnetic domain observations on magnetite and titanomaghemite grains (0.5 - 10 μm), *Geophysical Journal International*, 124, 75 - 88, 1996.
- Gelineau, W.J., M.S. thesis, University of Minnesota, Minneapolis, 1959.
- Georgeaud, V.M., P. Rochette, J.P. Ambrosi, D. Vandamme, D. Williamson, and A.K. Richter, Relationship between heavy metals and magnetic properties in a large polluted catchment; the Etang de Berre (south of France), *Physics and Chemistry of the Earth*, 22, 211-214, 1997.
- Goldthwait, R.P., Historical view of Early Wisconsin Glaciation, *Geological Society of America Special Paper*, 270, 13-18, 1992.
- Graham, R.W., B.W. Styles, J.J. Saunders, M.D. Wiant, E.D. McKay, T.R. Styles, and E.R. Hajic, Quaternary records of southwestern Illinois and adjacent Missouri, *ISGS Guidebook*, 23 (Ninth Biennial Meeting, American Quaternary Association University of Illinois at Urbana-Champaign), 1-113, 1986.
- Grimley, D.A., L.R. Follmer, and E.D. McKay, Magnetic susceptibility and mineral zonations controlled by provenance in loess along the Illinois and Central Mississippi river valleys, *Quaternary Research*, 49, 24-36, 1998.
- GRIP Members, Climate instability during the last interglacial period recorded in the GRIP ice core., *Nature*, 364, 203-207, 1993.
- Grüger, E., Late-Quaternary vegetation development in South-Central Illinois, *Quaternary Research*, 2, 217-231, 1972a.

- Grüger, E., Pollen and seed studies of Wisconsinan vegetation in Illinois, *Geological Society of America Bulletin*, 83, 2715-2734, 1972b.
- Hall, S.A., Deteriorated pollen grains and the interpretation of Quaternary pollen diagrams, *Review of Palaeobotany & Palynology*, 32, 193-206, 8 figs, 1 table, 18 refs, 1981.
- Hanesch, M., Magnetische Eigenschaften von Böden., Diplom thesis, Ludwig Maximilians-Universität, München, 1995.
- Hansel, A.K., and W.H. Johnson, Wedron and Mason groups: lithostratigraphic reclassification of deposits of the Wisconsin episode, Lake Michigan lobe area, *Illinois State Geological Survey Bulletin*, 104, 1-116, 1996.
- Harrison, S.P., J.E. Kutzbach, I.C. Prentice, P.J. Behling, and M.T. Sykes, The response of Northern Hemisphere extratropical climate and vegetation to orbitally induced changes in insolation during the last interglaciation, *Quaternary Research*, 43, 174-184, 1995.
- Hay, K.L., J.A. Dearing, S.M.J. Baban, and P. Loveland, A preliminary attempt to identify atmospherically-derived pollution particles in English topsoils from magnetic susceptibility measurements, *Physics and Chemistry of the Earth*, 22, 207-210, 1997.
- Heilman, M.D., D.L. Carter, and C.L. Gonzales, The ethylene glycol monoethyl ether (EGME) technique for determining soil-surface area, *Soil Science*, 100, 409-413, 1965.
- Heller, F., X. Liu, T. Liu, and T. Xz, Magnetic susceptibility of loess in China, *Earth and Planetary Science Letters*, 103, 301-310, 1991.
- Hilton, J., A simple model for the interpretation of magnetic records in lacustrine and ocean sediments, *Quaternary Research*, 27, 160-166, 1987.
- Hilton, J., and J.P. Lishman, The effect of redox changes on the magnetic susceptibility of sediments from a seasonally anoxic lake, *Limnology and Oceanography*, 30 (4), 907-909, 1985.
- Hoffmann, V., Greigite (Fe_3S_4): magnetic properties and first domain observations., *Physics of the Earth and Planetary Interiors*, 70, 288-301, 1992.
- Holleman, A.F., and E. Wiberg, *Lehrbuch der Anorganischen Chemie*, de Gruyter, Berlin, 1985.
- Hounslow, M.W., and B.A. Maher, Quantitative extraction and analysis of carriers of magnetization in sediments., *Geophysical Journal International*, 124, 57-74, 1996.
- Housen, B.A., S.K. Banerjee, and B.M. Moskowitz, Low-temperature magnetic properties of siderite and magnetite in marine sediments, *Geophysical Research Letters*, 23, 2843-2846, 1996.
- Hughes, R.E., D.M. Moore, and H.D. Glass, Qualitative and quantitative analysis of clay minerals in soils, in *Quantitative Methods in Soil Mineralogy*, edited by J.E. Amonette, and L.W. Zelazny, pp. 330-359, Soil Science Society of America, miscellaneous publication, Madison, 1994.
- Hughes, R.E., and R.L. Warren, Evaluation of the economic usefulness of earth materials by X-ray diffraction, *Illinois State Geol. Surv., Mineral Notes*, 102, 47-57, 1987.

- Hunt, C.P., M.J. Singer, G. Kletetschka, J. Ten Pas, and K.L. Verosub, Effect of citrate-bicarbonate-dithionite treatment on fine-grained magnetite and maghemite, *Earth and Planetary Science Letters*, 130, 87-94, 1995.
- Jackson, M., W. Gruber, J. Marvin, and S.K. Banerjee, Partial anhysteretic remanence and its anisotropy: Applications and grain-size-dependence, *Geophysical Research Letters*, 15 (5), 440-443, 1988.
- Jackson, M., B. Moskowitz, J. Rosenbaum, and C. Kissel, Field-dependence of AC susceptibility in titanomagnetites, *Earth and Planetary Science Letters*, 157, 129-139, 1998.
- Jackson, S.T., Pollen source area and representation in small lakes of the northeastern United States, *Review of Palaeobotany & Palynology*, 63, 53-76, 1990.
- Jacobs, A.M., and J.A. Lineback, Glacial geology of the Vandalia, Illinois region, *Illinois State Geological Survey Circular*, 442, 1969.
- Jenny, H., *Factors of Soil Formation, A System of Quantitative Pedology*, 281 pp., Mc Graw Hill, New York, 1941.
- Johnsen, S.J., H.B. Clausen, W. Dansgaard, N.S. Gundestrup, C.U. Hammer, and H. Tauber, The Eem stable isotope record along the GRIP ice core and its interpretation, *Quaternary Research*, 43, 117-124, 1995.
- Johnson, W.H., Ice-wedge casts and relict patterned ground in central Illinois and their environmental significance, *Quaternary Research*, 33, 51-72, 1990.
- Jordanova, D., E. Petrovski, N. Jordanova, J. Evlogiev, and B. V., Rock magnetic properties of recent soils from northeastern Bulgaria, *Geophysical Journal International*, 128, 474-488, 1997.
- Kapicka, A., E. Petrovsky, and N. Jordanova, Comparison of in situ field measurements of soil magnetic susceptibility with laboratory data, *Studia Geophysica et Geodetica*, 41, 391-395, 1997.
- Keen, K.L., and L.C.K. Shane, A continuous record of Holocene eolian activity and vegetation change at lake Ann, east-central Minnesota, *Geological Society of America Bulletin*, 102, 1646-1657, 1990.
- King, J., S.K. Banerjee, J. Marvin, and Ö. Özdemir, A comparison of different magnetic methods for determining the relative grain size of magnetite in natural materials: some results from lake sediments, *Earth and Planetary Science Letters*, 59, 404-419, 1982.
- King, J.A., Late-Quaternary vegetational history of Illinois., *Ecol. Monographs*, 51 (1), 43-62, 1981.
- Kittel, C., Physical theory of ferromagnetic domains, *Review of Modern Physics*, 21 (4), 541-583, 1949.
- Kletetschka, G., and S.K. Banerjee, Magnetic stratigraphy of Chinese loess as a record of natural fires, *Geophysical Research Letters*, 22 (11), 1241-1343, 1995.
- Krs, M., F. Novák, M. Krsova, P. Pruner, L. Kouklíková, and J. Jansa, Magnetic properties and metastability of greigite-smythite mineralization in brown-coal basins of the Krušné hory Piedmont, Bohemia, *Physics of the Earth and Planetary Interiors*, 70, 273-287, 1992.
- Kukla, G., The mystery of the Chinese magnetic dust, in *Lamont-Doherty Geol. Obs. Yearbook*, 1988.

- Kukla, G., F. Heller, X.M. Liu, T.C. Xu, T.S. Liu, and Z.S. An, Pleistocene climates in China dated by magnetic susceptibility, *Geology*, *16*, 811-814, 1988.
- Kutzbach, J.E., and H.E. Wright, Simulation of the climate of 18,000 yr. BP: Results for the North American/North Atlantic/European sector and comparison with the geologic record, *Quaternary Science Reviews*, *4*, 147-187, 1985.
- Lamothe, M., Dating Late-Pleistocene events in the St. Lawrence river drainage basin using luminescence: The problem of age underestimation, *GSA Abstracts with Programs*, *30*, A-260, 1998.
- Le Borgne, E., Susceptibilite magnetique anormale du sol superficiel, *Annales de Geophysique*, *11*, 399-419, 1955.
- Le Borgne, E., Influence du feu sur les proprietes magnetiques du sol et sur celles du schiste et du granite, *Annales de Geophysique*, *16*, 159-195, 1960.
- Leigh, D.S., and J.C. Knox, AMS radiocarbon age of the upper Mississippi valley Roxana silt, *Quaternary Research*, *39*, 282-289, 1993.
- Leveque, F., H. Lecoanet, P.-E. Mathe, D. Vandamme, F. Ben-Atig, A. Veron, and J.-P. Ambrosi, Monitoring of anthropogenic heavy metals accumulated in contaminated soils: potential of magnetic properties approach on multisource zone, *Annales Geophysicae Supplement*, *16*, C217, 1998.
- Li, W.-y., On dispersal efficiency of Picea pollen, *Acta Botanica Sinica*, *33*, 792-800, 1991.
- Lowrie, W., Identification of ferromagnetic minerals in a rock by coercivity and unblocking temperature properties, *Geophysical Research Letters*, *17*, 159-162, 1990.
- Lundelius, E.L., Terrestrial vertebrate faunas, in *Late-Quaternary Environments of the United States*, edited by H.E. Wright, pp. 311-353, 1983.
- Maher, B.A., Characterization of soils by mineral magnetic measurements, *Physics of the Earth and Planetary Interiors*, *42*, 76-92, 1986.
- Maher, B.A., Magnetic properties of modern soils and Quaternary loessic paleosols: paleoclimatic implications, *Paleogeography, Paleoclimatology, Paleoecology*, *137*, 25-54, 1998.
- Maher, B.A., and R.M. Taylor, Formation of ultrafine-grained magnetite in soils, *Nature*, *336*, 368-370, 1988.
- Maher, B.A., and R. Thompson, Mineral magnetic record of the Chinese loess and paleosols, *Geology*, *19*, 3-6, 1991.
- Maher, B.A., and R. Thompson, Paleorainfall reconstructions from pedogenic magnetic susceptibility variations in the Chinese loess and paleosols, *Quaternary Research*, *44*, 383-391, 1995.
- Makower, B., T.M. Shaw, and L.T. Alexander, The specific surface and density of some soils and their colloids, *Soil Science Society of America Proceedings*, *2*, 101-108, 1937.

- Mann, M.E., M.K. Hughes, and R.S. Bradley, Global scale temperature patterns and climate forcing over the past six centuries, *Nature*, 392, 779-787, 1998.
- Martinson, D.G., N.G. Pisias, J.D. Hays, J. Imbrie, T.C. Moore Jr., and N.J. Shackleton, Age dating and the orbital theory of the ice ages: Development of a high-resolution 0 to 300,000-year chronostratigraphy, *Quaternary Research*, 27, 1-29, 1987.
- Matthes, S., *Mineralogie, Eine Einführung in die spezielle Mineralogie, Petrologie und Lagerstättenkunde*, 444 pp., Springer, Heidelberg, 1987.
- Mc Andrews, J.H., Pollen analysis and vegetational history of the Itasca region, Minnesota, in *Quaternary Paleocology*, edited by E.J. Cushing, and H.E. Wright Jr., pp. 219-236, Yale University Press, New Haven, 1967.
- Mc Andrews, J.H., Pollen evidence for the protohistoric development of the "Bigwoods" in Minnesota (U.S.A.), *Review of Paleobotany and Palynology*, 9 (17-43), 1968.
- Mc Kay, E.D., Wisconsinian and Sangamonian type sections of central Illinois, *ISGS Guidebook*, 21 (Ninth Biennial Meeting, American Quaternary Association University of Illinois at Urbana-Champaign), 1-48, 1986.
- Mc Nab, T.K., R.A. Fox, and A.J.F. Boyle, Some magnetic properties of magnetite (Fe_3O_4) crystals, *Journal of Applied Physics*, 39, 5703-5711, 1968.
- McKay, E.D., Wisconsin loess stratigraphy of Illinois, *Illinois Geological Survey guidebook*, 13, 95-108, 1979.
- Meteorological Office, Climate change and its impacts: Some highlights from the ongoing UK research programme: a first look at results from the Hadley Centre's new climate model, Hadley Centre for Climate Prediction and Research, 1998.
- Miyahara, Y., Impurity effects on the transition temperature of magnetite, *Journal of the Physical Society of Japan*, 32, 629-634, 1972.
- Morin, F.J., Magnetic susceptibility of $\alpha\text{-Fe}_2\text{O}_3$ and $\alpha\text{-Fe}_2\text{O}_3$ with added titanium, *Journal of Physics*, 3, 819-820, 1950.
- Moskowitz, B.M., R.B. Frankel, and D.A. Bazylinski, Rock magnetic criteria for the detection of biogenic magnetite, *Earth and Planetary Science Letters*, 120, 283-300, 1993.
- Moskowitz, B.M., R.B. Frankel, S.A. Walton, D.P.E. Dickson, K.K.W. Wong, T. Douglas, and S. Mann, Determination of the preexponential frequency factor for superparamagnetic maghemite particles in magnetoferritin, *Journal of Geophysical Research*, 102, 22671-22680, 1997.
- Mucci, A., J.W. Morse, and M.S. Kaminsky, Auger spectroscopy analysis of magnesian calcite overgrowths precipitated from seawater and solutions of similar composition, *American Journal of Science*, 285, 289-305, 1985.

- Mullins, C.E., Magnetic susceptibility of the soil and its significance in soil science - a review, *Journal of Soil Science*, 28, 223-246, 1977.
- Nawrocki, J., A. Wojcik, and A. Bogucki, The magnetic susceptibility record in the Polish and western Ukrainian loess-palaeosol sequences conditioned by palaeoclimate, *Boreas*, 25, 161-169, 1996.
- Neale, J.W., Ostracods and paleosalinity reconstruction, in *Ostracoda in the Earth Sciences*, edited by P. De Dekker, and P. J.-P., pp. 125-155, Elsevier, Amsterdam, 1988.
- Newman, A.C.D., The specific surface of soils determined by water sorption, *Journal of Soil Science*, 34, 23-32, 1983.
- Oches, E.A., and S.K. Banerjee, Rock magnetic proxies of climate change from loess-paleosol sediments of the Czech Republic, *Studia Geophysica et Geodaetica*, 40, 287-300, 1996.
- Oches, E.A., and P.A. Solheid, Rock magnetic clues to Late-Pleistocene paleoclimate in the upper Mississippi Valley (abstr.), in *American Quaternary Association 14th Biennial Meeting*, pp. 114, Flagstaff, Arizona, 1996.
- O'Reilly, W., *Rock and Mineral magnetism*, 220 pp., Blackie, Glasgow, 1984.
- Overpeck, J.T., T. Webb III, and I.C. Prentice, Quantitative interpretation of fossil pollen spectra: Dissimilarity coefficients and the method of modern analogs, *Quaternary Research*, 23, 87-108, 1985.
- Özdemir, Ö., and S.K. Banerjee, A preliminary magnetic study of soil samples from west-central Minnesota, *Earth and Planetary Science Letters*, 59, 393-403, 1982.
- Özdemir, Ö., and D. Dunlop, Thermoremanence and Néel temperature of goethite., *Geophysical Research Letters*, 23 (9), 921-924, 1996.
- Özdemir, Ö., D.J. Dunlop, and B.M. Moskowitz, The effect of oxidation on the Verwey transition in magnetite, *Geophysical Research Letters*, 20, 1671-1674, 1993.
- Peattie, D.C., *A Natural History of Trees of Eastern and Central North America*, 606 pp., Houghton Mifflin, Boston, 1991.
- Peck, J.A., J.W. King, S.M. Colman, and V.A. Kravchinsky, A rock magnetic record from Lake Baikal, Siberia: Evidence for Late-Quaternary climate change, *Earth and Planetary Science Letters*, 122, 221-238, 1994.
- Petermann, H., and U. Bleil, Detection of live magnetotactic bacteria in South Atlantic deep-sea sediments, *Earth & Planetary Science Letters*, 117, 223-228, 1993.
- Petersen, N., T. von Dobeneck, and H. Vali, Fossil bacterial magnetite in deep-sea sediments from the South Atlantic Ocean, *Nature*, 320, 611-615, 1986.
- Pewe, T.L., The periglacial environment in North America during Wisconsin time, *Late-Quaternary environments of the United States. Vol. 1*, 157-189, 18 figs, 9 tables, c345 refs., 1983.

- Pons, A., J. Guiot, J.L. de Beaulieu, and M. Reille, Recent contributions to the climatology of the last glacial-interglacial cycle based on French pollen sequences, *Quaternary Science Reviews*, *11*, 439-448, 1992.
- Puller, J.C., A study of Fossil Ostracoda from Elkwater Lake, Alberta: Lake response to Late-Holocene Climate Changes, MS thesis, Kent State University, 1995.
- Pye, K., *Aeolian dust and dust deposits*, 334 pp., Academic Press, London, 1987.
- Pye, K., and R. Johnson, Stratigraphy, geochemistry, and thermoluminescence ages of Lower Mississippi Valley loess, *Earth Surface Processes & Landforms*, *13*, 103-124., 1988.
- Raiswell, R., and R.A. Berner, Pyrite formation in euxinic and semi-euxinic sediments, *American Journal of Science*, *285*, 710-724, 1985.
- Reynolds, R.L., and J.W. King, Magnetic records of climate change, *Reviews of Geophysics*, *33*, suppl. (IUGG Report), 101-110, 1995.
- Reynolds, R.L., M.L. Tuttle, C.A. Rice, N.S. Fishman, J.A. Karachewski, and D.M. Sherman, Magnetization and geochemistry of greigite-bearing Cretaceous strata, North Slope basin, Alaska., *American Journal of Science*, *294*, 485-528, 1994.
- Richmond, G.M., and D.S. Fullerton, Introduction to Quaternary glaciations in the United States of America, *Quaternary Science Reviews*, *5*, 3-10, 1986.
- Roberts, A.P., Magnetic properties of sedimentary greigite (Fe₃S₄), *Earth and Planetary Science Letters*, *134*, 227-236, 1995.
- Robertson, D.J., and D.E. France, Discrimination of remanence-carrying minerals in mixtures, using isothermal remanent magnetization acquisition curves, *Physics of the Earth and Planetary Interiors*, *82*, 223-234, 1994.
- Robinson, S.G., The Late-Pleistocene paleoclimatic record of North Atlantic deep-sea sediments revealed by mineral-magnetic measurements, *Physics of the Earth and Planetary Interiors*, *42*, 22-47, 1986.
- Robinson, S.G., M.A. Maslin, and I.N. McCave, Magnetic susceptibility variations in upper Pleistocene deep-sea sediments of the NE Atlantic; implications for ice rafting and paleocirculation at the last glacial maximum, *Paleoceanography*, *10*, 221-250, 1995.
- Rochette, P., G. Fillion, J.-L. Mattéi, and M.J. Dekkers, Magnetic transition at 30-34 Kelvin in pyrrhotite: insight into a widespread occurrence of this mineral in rocks, *Earth and Planetary Science Letters*, *98*, 319-328, 1990.
- Rosenbaum, J.G., R.L. Reynolds, D.P. Adam, J. Drexler, A.M. Sarna-Wojcicki, and G.C. Whitney, A middle Pleistocene climate record from Buck lake, Cascade range, southern Oregon - Evidence from sediment magnetism, trace-element geochemistry, and pollen, *Geological Society of America Bulletin*, *108* (10), 1328-1341, 1996.

- Rummery, T.A., J. Bloemendahl, J. Dearing, and F. Oldfield, The persistence of fire-induced magnetic oxides in soil and lake sediments, *Annales de Géophysique*, 35 (fasc.2), 103-107, 1979.
- Scheffer, F., and P. Schachtschabel, *Lehrbuch der Bodenkunde*, Enke, Stuttgart, 1992.
- Schwalb, A., S.M. Locke, and W.E. Dean, Ostracode $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ evidence of Holocene environmental changes in the sediments of two Minnesota lakes, *Journal of Paleolimnology*, 14, 281-296, 1995.
- Schwertmann, U., Occurrence and formation of iron oxides in various pedoenvironments., in *Iron in Soils and Clay Minerals*, edited by J.W. Stucki, B.A. Goodman, and U. Schwertmann, pp. 276-308, Reidel Publishing Company, Dordrecht, 1988.
- Singer, M.J., and P. Fine, Pedogenic factors affecting magnetic susceptibility of northern California soils., *Soil Sci. Soc. Am. J.*, 53, 1119-1127, 1989.
- Singer, M.J., P. Fine, K.L. Verosub, and O.A. Chadwick, Time dependence of magnetic susceptibility of soil chronosequences on the California coast, *Quaternary Research*, 37, 323-332, 1992.
- Singer, M.J., K.L. Verosub, and P.T. Fine, J., A conceptual model for the enhancement of magnetic susceptibility in soils, *Quaternary International*, 34-36, 243-248, 1996.
- Smith, A.J., Lacustrine ostracod diversity and hydrochemistry in lakes of the northern Midwest of the United States, in *Ostracoda in the Earth and Life Sciences, Proceedings of the 11th Int. Symposium on Ostracoda, Warnambook, Australia*, edited by K.G. McKenzie, and P.J. Jones, pp. 493-500, A.A. Balkema, Rotterdam, 1991.
- Snowball, I., Mineral magnetic properties of Holocene lake sediments and soils from the Kårsa valley, Lapland, Sweden, and their relevance to palaeoenvironmental reconstruction, *Terra Nova*, 5 (3), 258-270, 1993.
- Snowball, I.F., Magnetic hysteresis properties of greigite (Fe_3S_4) and a new occurrence in Holocene sediments from Swedish Lapland, *Physics of the Earth and Planetary Interiors*, 68, 32-40, 1991.
- Soffel, H.C., The singledomain-multidomain transition in natural intermediate titanomagnetites, *Zeitschrift fuer Geophysik*, 37, 451-470, 1971.
- Soffel, H.C., Pseudo-single-domain effects and single-domain - multidomain transition in natural pyrrhotite deduced from domain structure observations, *Journal of Geophysics*, 42, 351-359, 1977.
- Soffel, H.C., *Paläomagnetismus und Archäomagnetismus*, 276 pp., Springer, Berlin, Heidelberg, 1991.
- Stacey, F.D., and S.K. Banerjee, *The physical principles of rock-magnetism*, Elsevier, Amsterdam, 1974.
- Stevens, J.G., H. Pollak, L. Zhe, V.E. Stevens, R.M. White, and J.L. Gibson, *Mössbauer Handbook, Mineral Data*, pp. 136, Mössbauer Effect Data Center, Univ. of N. Carolina, Asheville, 1983.
- Stockhausen, H., Some new aspects for the modelling of isothermal remanent magnetization acquisition curves by cumulative log Gaussian functions, *Geophysical Research Letters*, 25 (12), 2217-20, 1998.

- Taylor, K.C., G.W. Lamorey, G.A. Doyle, R.B. Alley, P.M. Grootes, P.A. Mayewski, J.W.C. White, and L.K. Barlow, The 'flickering switch' of Late-Pleistocene climate change., *nature*, 361, 432-436, 1993.
- Teed, R., A >130,000-Year-Long Pollen Record from Pittsburg Basin, Illinois, PhD thesis, University of Minnesota, in prep.
- Teed, R., B.B. Curry, and E. Ito, A long (> 130,000 yrs) pollen and ostracode record from Pittsburg Basin, Illinois, *AMQUA Program and Abstracts of the 14th Biennial Meeting*, p. 133, 1996.
- Thompson, R., and F. Oldfield, *Environmental Magnetism*, 227 pp., Allen and Unwin, London, 1986.
- Thouveny, N., J.-L. de Beaulieu, E. Bonifay, K.M. Creer, J. Guiot, M. Icoie, S. Johnsen, J. Jouzel, M. Reille, T. Williams, and D. Williamson, Climate variations in Europe over the past 140 kyr deduced from rock magnetism, *Nature*, 371, 503-506, 1994.
- Tiller, K.G., and L.H. Smith, Limitations of EGME retention to estimate the surface area of soils, *Australian Journal of Soil Research*, 28, 1-26, 1990.
- Verosub, K.L., and A.P. Roberts, Environmental magnetism: Past, present, and future, *Journal of Geophysical Research*, 100, 2175-2192, 1995.
- Vlag, P., N. Thouveny, D. Williamson, V. Andrieu, M. Icoie, and A.J. van Velzen, The rock magnetic signal of climate change in the maar lake sequence of Lac St Front (France), *Geophysical Journal International*, 131, 724-740, 1997.
- Wansard, G., P. De Deckker, and R. Julia, Variability in ostracod partition coefficients D(Sr) and D(Mg); implications for lacustrine palaeoenvironmental reconstructions, *Chemical Geology*, 146, 39-54, 1998.
- Watson, R.A., and H.E. Wright, The end of the Pleistocene: a general critique of chronostratigraphic classification, *Boreas*, 9, 153-163, 1980.
- Watts, W.A., and T.C. Winter, Plant macrofossils from Kirchner Marsh, Minnesota - a paleoecological study, *Geological Society of America Bulletin*, 77, 1339-1360, 1966.
- Wersin, P., P. Hoehener, R. Giovanoli, and W. Stumm, Early diagenetic influences on iron transformations in a fresh- water lake sediment, *Chemical Geology*, 90, 233-252, 1991.
- White, A.F., M.L. Peterson, and M.F.J. Hochella, Electrochemistry and dissolution kinetics of magnetite and ilmenite, *Geochimica et Cosmochimica Acta*, 58 (8), 1859-1975, 1994.
- Whitlock, C., P.J. Bartlein, and W.A. Watts, Vegetation history of Elk Lake, *Geological Society of America Special Paper*, 276, 251-274, 1993.
- Willman, H.B., and J.C. Frye, Pleistocene stratigraphy of Illinois, *Illinois State Geological Survey Bulletin*, 94, 1970.

- Winograd, I.J., T.B. Coplen, J.M. Landwehr, A.C. Riggs, K.R. Ludwig, B.J. Szabo, P.T. Kolesar, and K.M. Revez, Continuous 500,000-year climate record from vein calcite in Devil's Hole, Nevada., *Science*, 258, 255-260, 1992.
- Winograd, I.J., J.M. Landwehr, K.R. Ludwig, T.B. Coplen, and A.C. Riggs, Duration and structure of the past four interglaciations, *Quaternary Research*, 48, 141-154, 1998.
- Worm, H.-U., On the superparamagnetic-stable single domain transition for magnetite, and frequency dependence of susceptibility, *Geophysical Journal International*, 133, 201-206, 1998.
- Wright, H.E., and H.L. Patten, The pollen sum, *Pollen et Spores*, 5, 445-450, 1963.
- Wright, H.E., T.C. Winter, and H.L. Patten, Two pollen diagrams from southeastern Minnesota: Problems in the regional lateglacial and postglacial vegetational history, *Geological Society of America Bulletin*, 74, 1371-1396, 1963.
- Wright, H.E.J., Surge moraines of the Klutlan glacier, Yukon Territory, Canada: Origin, wastage, vegetation succession, lake development, and application to the late-glacial of Minnesota, *Quaternary Research*, 14, 2-18, 1980.
- Wright, H.E.J., Synthesis; The land south of the ice sheets, in *North America and adjacent oceans during the last deglaciation*, edited by W.F. Ruddiman, and H.E. Wright, Geological Society of America, Boulder, Colorado, 1987.
- Xia, J., D.R. Engstrom, and E. Ito, Geochemistry of ostracode calcite: part 2. The effects of water chemistry and seasonal temperature variation on *Candona rawsoni*, *Geochimica et Cosmochimica Acta*, 61, 383-391, 1997a.
- Xia, J., E. Ito, and D.R. Engstrom, Geochemistry of ostracode calcite: part 1. An experimental determination of oxygen isotope fractionation, *Geochimica et Cosmochimica Acta*, 61, 377-382, 1997b.
- Zhu, H., and R.G. Baker, Vegetation and climate of the last glacial-interglacial cycle in Southern Illinois, USA, *Journal of Paleolimnology*, 14, 337-354, 1995.