

RESUME

CATHERINE KING SKOKAN

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Division of Engineering
Colorado School of Mines
Golden, Colorado 80401

Date of Birth: October 21, 1948

Education:

BS Colorado School of Mines, 1969; Major in Geophysical Engineering
MS Colorado School of Mines, 1971; Major in Geophysical Engineering
PhD Colorado School of Mines, 1974; Major in Geophysical Engineering; Minor in Geology

Thesis Title: A time-domain electromagnetic survey of the East Rift Zone, Kilauea Volcano, Hawaii

Work Experience:

1991 to present Associate Professor

1987-Fall 1991 Associate Professor and Assistant Department Head, Department of Geophysics, Colorado School of Mines.

1982-1987 Assistant Professor, Department of Geophysics, Colorado School of Mines.

1983-1986 Occupied the Union Chair.

1980 (Summer) Mining consulting Fairplay-Alma District.

1977-1982 Adjunct Assistant Professor, Department of Geophysics, Colorado School of Mines.

Teaching: Linear Systems Analysis, Digital Data Processing, Field Methods,
(Director - 1982)
Research: Properties of Geothermal Reservoir Rocks; Modeling of Electromagnetic Data.

1976-1977 Instructor, Department of Geophysics, Colorado School of Mines,
Teaching: Information Theory, Linear System Analysis,
Research: Properties of Geothermal Reservoir Rocks.

1977 (Summer) Mining consulting south of Grand Junction.

1975-1976 Research Associate, Department of Geophysics, Colorado School of Mines.
Research: Statistics of Well Logs-Kilauea Volcano.

1975(Part-time) Geophysicist (Potential Methods Consultant) with Seismic Stratigraphic Unit, USGS.

1973-(Fall) Research Assistant involved in NSF exploration and drilling program at Kilauea Volcano, Hawaii, Colorado School of Mines.

1972-(Fall) Electrical Research under a Grant.

1972-(Summer) Field Geophysicist, involved in electrical measurements in geothermal areas in Western United States, Group Seven, Inc.

1972-(Summer) Field Geophysicist, involved in field collection of deep electromagnetic data and electromagnetic computer modeling problems, Colorado School of Mines.

1971-(Fall) Electrical Research under Grant.

1970-(Summer) Magnetic Interpreter, Magnetic Data Collection, Exploration Division, Kennecott Copper Corp.

1969-(Summer) Seismic Record Changer, Department of Geophysics, Colorado School of Mines.

1967-1968 (Summers) Earthquake Record Reader, Earth Science Division, Teledyne.

Professional Societies:

Sigma Xi (program chair 1996-7; president 1998-9; treasurer 2000)

Tau Beta Pi

American Geophysical Union (Secretary - Front Range Branch, 1990-96)

International Association of Geomagnetism and Aeronomy

Colorado Association of Science Teachers (collegiate representative 1990-95, President (elect/active/past) 1998-2000)

Engineering and Environmental Geophysical Society

National Association of Science Teachers

Awards:

Outstanding Young Women of America Award 1979

Union Oil Chaired Professorship

1982-83; 1983-84; 1984-85.

Outstanding Professor in Department of Geophysics 1985-86.

Featured in "Women in Geophysics" Pamphlet distributed by the Society of Exploration Geophysicists, 1986.

Excellence in College Teaching Award - Colorado Science Teachers (1994)

Leadership Award (Education) – Partnership with CSM/Adams 50 School District

Publications:

King, Catherine, 1971, Time-domain electromagnetic coupling: Colorado School of Mines Thesis -1427.

Skokan, Catherine K., 1974, A time-domain electromagnetic survey of the east rift Zone Kilauea Volcano, Hawaii: Colorado School of Mines Thesis -1700.

Keller, G.V., Murray, J.C., Skokan, J.J., and Skokan, C.K., 1974, CSM research drill hole at summit of Kilauea Volcano, Mines Mag., May 1974, p. 14-18.

Keller, G.V., Skokan C.K., Skokan, J.J., Daniels J., 1977, Electrical resistivity and time-domain electromagnetic surveys of Puna and Kalu districts, Hawaii County, Hawaii: in Geoelectric studies of the East Rift, Kilauea Volcano, Hawaii Island, University of Hawaii Report HIG 77-15, p. 1-90.

Keller, G.V., Skokan, C.K., Crewdson, R.A., and Daniels, J.J., 1978, Time-domain

electromagnetic sounding. Quarterly, CSM, vol. 73, no. 4.

Keller, G.V., Grose, L.T., Murray, J.C., and Skokan, C.K., 1978, Results of an experimental drill at the summit of Kilauea Volcano: Journal of Volcanology and Geothermal Research, vol. 5, p. 345-385.

Skokan, C.K., and Stoyer, C.H., 1978, A review of geophysical methods for groundwater exploration, on file at Colorado Water Congress.

Skokan, C.K., 1984, Future of undergraduate education in geophysics, Mines Magazine, vol. 74, no. 3.

Skokan, C.K., Pfeifer, M.C., Keller, G.V., and Andersen, H.T., 1989, Studies of Electrical and Electromagnetic Methods for Characterizing Salt Properties at the WIPP site, New Mexico, SANDIA LABS, SAND87-7174, UC-70, June 1989.

Skokan, C.K., Andersen, H.T., Keller, G.V., and Cataldi, A., 1990. Gravity and Electromagnetic Studies of the Saratoga Springs Area, New York, NE Geol., vol. 11, no. 3.

Skokan, C.K., Keller, G.V., and Andersen, H.T., 1991. Deep Long Offset Transient Electromagnetic Surveys for Crustal Studies in the United States, Phy. Earth Plan. Inter., vol. 66, p. 39 - 50.

Skokan, C.K., 1993, Overview of Electromagnetic Methods Applied in Active Volcanic Areas of Western United States, Jour. of Volcanology & Geothermal Research, vol. 56, p. 309 - 318

Cataldi, A., Hansen, R. O., Pinna, E., Skokan, C. K., Traynin, P., 1993, Approach to a 3D Automatic interpretation of Kenya Gravity Field via Joint Analytic techniques, paper from presentation at 10th Convegno Annuale del Gruppo Nazionale di Geofisica, Rome.

Published Abstracts:

Skokan, C.K., 1980, Interpretation of long-line time domain electromagnetic data from northwestern United States, 26th Geologic Congress, Paris.

Keller, S.D., Skokan C.K., and Keller, G.V., 1985, Use of 3 component measurements for deep electromagnetic sounding, SEG, Washington, D.C.

Skokan, C.K., and Keller, G.V., 1985, Selection of a method for deep electromagnetic sounding, IAGA, Prague.

Skokan, C.K., Keller, G.V., Andersen, H.T., and Berkman, F.E., 1985, Geophysical studies at the Creede Caldera, Colorado, AGU, San Francisco.

Skokan, C.K., Keller, G.V., and Andersen, H.T., 1986, Electromagnetic surveys at the Creede Caldera, Colorado, USA, German Geophysical Society (DGG) Karlsruhe, Germany.

Skokan, C.K., and Keller, G.V., 1987, Hawaii Drilling Project Revisited: Hawaii Symposium on How Volcanoes Work (abs), Hilo, Hawaii.

Skokan, C.K., Keller, G.V., Andersen, H.T., Berkman, F.E., and Leslie, W.W. 1987, Integrated Study over the San Juan Volcanic Field: Society of Exploration Geophysicists Midwest-Meeting (abs), Dallas, Texas.

Skokan, C.K., Keller, G.V., Andersen, H.T., and Leslie, W.W., 1987, Transient Electromagnetic Sounding Studies in the San Juan Volcanic field: Geologic Society of America Rocky Mountain Section (abs), Boulder, Colorado, (Invited Paper).

Keller, G.V., and Skokan, C.K., 1987, Electromagnetic Studies of the Interiors of Volcanoes - Terrestrial Heat Flow and the Structure of the Lithosphere (abs), Bechyne, Czechoslovakia.

Rossow, J., Skokan, C.K., Keller, G.V., 1987, An Investigation of Deconvolution Methods for Transient Electromagnetic Records: International Union of Geodesy and Geophysics (abs), Vancouver, Canada.

Keller, G.V., Skokan, C.K., and Worthington, E.W., 1987, A Study of Coherency of Magnetic and Electric Fields over Distances of Several Thousand Kilometers: International Union of Geodesy and Geophysics (abs), Vancouver, Canada.

Skokan, C.K., Keller, G.V., 1987, Development of a Seismo-electric Downhole Surveying System: American Geophysical Union (abs) San Francisco, California (Invited Paper).

Keller, Susan, Skokan, Catherine, and Keller, George, 1988, Expert System to Assist in Geoelectric Studies: Ninth Workshop on Electromagnetic Induction of Earth and Moon (IAGA), October, 1988.

Pfeifer, M.C., and Skokan, C.K., 1988, Design Parameters for a Quasistatic Electromagnetic Imaging System: Ninth Workshop on Electromagnetic Induction of Earth and Moon (IAGA), October, 1988.

Keller, S.D., Skokan, C.K., and Keller, G.V., 1988, Geophysical Studies of the Taconic Overthrust (New York): AGU Transactions, Vol. 69, No. 44, December AGU meeting.

Borns, D.S., Skokan, C.K., Starrett, J.M. and Andersen, H.T., 1988, Seismic Methods to Monitor the Development of the Disturbed Rock Zone Around Underground Openings in Salt: Presented at American Geological Society Centennial meeting in Denver, 1988.

Pfeifer, M.C., Borns, D.J., Skokan, C.K., Andersen, H.T., and Starrett, J., 1989, Geophysical Methods to Monitor the Development of the Disturbed Rock Zone Around Underground Excavations in Bedded Salt. (Abs. for SAGEEP meeting, Golden, CO March 13, 1989).

Skokan, C.K., Andersen, H.T., Pfeifer, M.C., and Starrett, J.M., 1989, Electrical and Seismic Studies of Disturbed Rock Zones in Bedded Salt. (Abs. for IAGA meeting, Exeter, U.K., July 1989).

Strack, K-M, Skokan, C.K., and Andersen, H.T., 1989, Survey of Distribution of Deep Long Offset Transient Electromagnetic Surveys for Crustal Studies. (Abs. for IAGA meeting, Exeter, U.K., July 1989).

Skokan, C.K., 1989, A Study of Basement Structure in Eastern New York State -- A Joint Electromagnetic/Gravity Survey. (Abs. for IAGA meeting, Exeter, U.K., July 1989).

Skokan, C.K., 1989, Use of Long-Offset Controlled-Source Transient Electromagnetics in Areas of High Surface Resistivity. (Abs. for EGA meeting, Barcelona, Spain, March 1989).

Pfeifer, M.C., Keller, G.V., Skokan, C.K., and Andersen, H.T., 1989, Electrical Properties

of the Waste Isolation Pilot Plant. (Abs. for EAEG meeting, Berlin, W. Germany, June 1989).

Skokan, C.K., and Chi, Dong, 1990, Use of the seismo -electric effect in engineering problems (Extended Abstract for SAGEEP (Symposium on the Application of Geophysics to Engineering and Environmental Problems), March 1990).

Skokan, C.K., and Chi, Dong, 1990, Use of the Seismo -Electric Effect in Engineering Problems (Extended Abstract for SAGEEP (Symposium on the Application of Geophysics to Engineering and Environmental Problems), March 1990).

Skokan, C.K., and Leslie, W.W., 1990, Moat Sediments in the Creede Caldera, Mineral County, Colorado (Published Abs. from 10th Workshop on Electromagnetic Induction in the Earth, Ensenada, Mexico).

Skokan, C.K., 1990, Electrical Studies of Dotsero Volcano, Colorado (Abs. from. 10th Workshop on Electromagnetic Induction in the Earth, Ensenada, Mexico).

Skokan, C. K., Chi, Dong, 1991, Laboratory investigations of the seismo -electric effect on standard saturated samples (Published abs. AUG, Dec. 1991).

Skokan, C. K., Bennett, R., Friedman, G., Meade, R., Sanders, J., 1991, Drill hole proposal for Eastern NY State, the Albany Basin (Published Abs., Continental Drilling Forum, AGU, Dec. 1991).

Skokan, C. K., and Knoshaug, R. K., 1992, An integrated geophysical study of the Sand Dunes National Monument, Colorado: (Published Abs., FRAGU, Feb., 1992).

Skokan, C. K., and Chi, Dong, 1993, Laboratory investigations of the seismo -electric effect: (Published Extended Abs., 10th Tunnel Detection Conference, Golden, 1993).

Skokan, C. K., and Andersen, H. T., 1993, Use of Geophysical Methods to Investigate Underground Damaged Rock Zones: (Published Extended Abs., AIME meeting, Reno.)

Faggioni, O., Keller, G. V., Pinna, E., and Skokan, C., 1993, Comparison of sensitivity of TDEM, MT, and Schlumberger soundings: (Published abstract for 12th Convegno Nazionale delle Ricerche, Rome, November)

C. K. Skokan , 1994, Multidisciplinary Senior Design Program at the Colorado School of Mines (AGU Conference on Undergraduate Education in the Geosciences, Washington DC.)

R. L. Miller and C. K. Skokan, 1994, Engineering Practices Introductory Course Sequence at the Colorado School of Mines(AGU Conference on Undergraduate Education in the Geosciences, Washington DC.)

Khair, Kamal, and C.K. Skokan, 1995, A Physical Model of Salination and Desalination in Groundwater (Front Range Am. Geophy. Union meeting, Fort Collins, CO)

Skokan, C. K., C. Edwards, J. Holt, and A. Vaughan, 1996, An Integrated Geophysical Study of the Yarmony Archeological Site, Colorado, Extended Abstract for SAGEEP 1996, Keystone, CO.

Khair, K. and C. Skokan, 1996, A Model Study of Salination in Groundwater, Extended Abstract for SAGEEP 1996, Keystone, CO.

Duffield, Judy and C. Skokan, 2000, Technology in Education in the Early Grades, Extended Abstract for SITE2000, San Diego.

Short Courses and Visiting Lecture/Scientist positions:

Electrical Methods Applied to Geothermal Exploration, CSM, April 1975, and March 1976.

Engineering Geophysical Techniques, CSM, offered twice 1978 and in spring 1979.

Use of Electrical Methods in Oil and Gas Exploration, Caracas, Venezuela, December, 1986.

Introduction to Geophysical Methods: Electromagnetics, Gravity, and Magnetics: Bogota, Colombia, October, 1989.

Electromagnetic Prospecting in Volcanic and Geothermal Regions, Pisa, Italy, 1993.

Meetings Organized:

Conference on Exploration for the Geothermal Reservoir; cosponsored by NSF and CSM, May 4-5, 1976.

Semi-Centennial Seminar on Exploration Geophysics for the 50th Anniversary of the Geophysics Department, Nov. 18-19, 1976.

Conference on Geophysical Studies of the Earth's Crust and Upper Mantle; cosponsored by CSM and ONR, Vail, Colorado, July 1977.

Conference on the Future of Education in Geophysics, CSM, April 1984.

Front Range American Geophysical Union Annual Regional Meetings (1990 - 1996)

Colorado Science Convention (Organizing Committee 1994, 1995, 1997, 1998, 2000)

National Science Convention (Organizing Committee for Regional Meetings (1993,1996)

Engineering and Environmental Geophysical Society Conference Program Chair 1996

Engineering and Environmental Geophysical Society Conference Workshop Chair 2000

Funded Research Projects:

Seismic Reflections from Gas Reservoirs (with J.E. White) 1977 -- NSF.

Physical Properties of the Geothermal Reservoir Rock (with G.V. Keller) 1977-1979 -- ERDA.

Search for Groundwater (with C.H. Stoyer) 1978 -- City of Naturita, Colorado.

Interpretation of Long-Line Time-Domain Electromagnetic Data from Northwestern United States 1979-80 -- NSF.

Gravity and Electromagnetic Survey of the Albany Basin (with G.V. Keller) 1985 -- NYGAS.

A Gravity and Seismic Survey of the Creede Caldera 1986 -- Geophysics Fund.

Electromagnetic Study of the Salt at Tunnel Entries of the WIPP Site, New Mexico 1986 -- Sandia Labs.

Construction of a multi-use electromagnetic system for INTEVEP, Venezuela -- 1986.

Modification of electromagnetic system for use in areas of high surface resistivity -- NYGAS -- 1986.

Coherence study of telluric waves over great distances -- ONR -- 1986.

Holographic/Tomographic Studies at the WIPP site; SANDIA NAT'L LABS, 1987.

Seismic Tomographic Study at the WIPP site; SANDIA NAT'L LABS, 1987.

Funded Research Projects (continued):

Design, Fabricate, and Test a Prototype System for Underground DC Data Gathering, SANDIA, 1987.

EM Proto System Phase I, Phase II; SANDIA, 1988.

Develop New Underground Geophysical Methods, SANDIA, (1988-1994).

Survey of the Cambrian/Precambrian Thrust Sheet in Eastern New York using Gravity and Transient Electromagnetic Measurements (1988-1990) NYGAS.

Integration of Seismic Data with Gravity and Electrical Data in the Albany Basin (1991-1993) NYGAS

Multidisciplinary Teamwork (summer, 1994), SEG

Geophysical Evaluation of the Yarmony Archeological Site, BLM, 1995

Project Realization Consortium Affiliate Institution (NSF), with Bob King, 1995-7

Soil Magnetic Permeability Measurements for Archeological Purposes, National Park Service, 1995-6

Geophysical Evaluation of Wolford Mountain Reservoir, BLM, 1997-8

Integrating Technology with Elementary Physical Science: A Workshop for Teachers, CCHE, 1998-9

Integration of Physical Science and Technology: Workshops for K-6 Teachers, CCHE, 2000-2001