

**Publications from Supported Research
1991-1992
ICS Contributions**

COUSENS, BRIAN L.

"Post-eruptive Alteration of Silicic Ignimbrites and Lavas, Gran Canaria, Canary Islands: Sr, Nd, Pb, and O Isotopic Evidence," Accepted in *Geochimica et Cosmochimica Acta*, In press (with **Dobson, Patrick F., and Spera, Frank J.**). (ICS contribution #0133-28CM)

CULLEN, STEPHEN

"Is Our Ground-Water Monitoring Strategy Illogical?" *Groundwater Monitoring Review*, Vol. 12, no. 3, pp. 103-107, 1992 (with **Kramer, John H., Everett, Lorne G. and Eccles, Lawrence A.**). (ICS contribution #0092-24HW)

EVERETT, LORNE

"Passive Remediation Strategies for Petroleum Contaminated Sites," Presented at the Hazardous Materials Control Research Institute: HMC-Northeast '91 Conference Proceedings pp. 115-119, Boston, MA, July, 1991 (with **Cullen, Stephen and Eccles, Larry**). (ICS contribution #0076-18HW)

GRAHAM, D. W.

"Helium isotopes in some historical lavas from Mount Vesuvius," *Journal of Volcanological and Geothermal Research*, In press (with **Kilburn, C.R.J., Lupton, J.E., Allard, P., and Spera, F.J.**). (ICS contribution #0102-17CM)

HULL, ALAN J.

"Seismotectonics of the Northern Elsinore Fault Zone, Southern California," *Bulletin Seismological Society of America*, Vol. 82, No. 2 (with **Nicholson, Craig**). (ICS contribution #0080-10EQ-21CS)

KELLER, EDWARD A.

"Fluid-Pressure Induced Seismicity at Regional Scales" Submitted to *Nature* (with **Loaiciga, Hugo**). (ICS contribution #0104-15EQ)

"Earthquakes, Fluid Pressure, and Mountain Building: A Model," Submitted to *Science Magazine*, Under review 1992 (**with Loaiciga, Hugo**). (ICS contribution #0088-22HW)

KRAMER, JOHN

"Vadose Zone Monitoring with the Neutron Moisture Probe," *Groundwater Monitoring Review*, Vol. 12, no. 3, pp. 177-187, 1992 (**with Cullen, Stephen J. and Everett, Lorne G.**). (ICS contribution #0090-23HW)

LEIPNIK, MARK R.

"Implementing Geographic Information Systems for Water Resources Management: The Issues," Submitted to *Journal of the American Society of Civil Engineers Water Resources Planning and Management Division*, In press (**with Kemp, Karen K. and Loaiciga, Hugo**). (ICS contribution #0089-22HW)

LOAICIGA, HUGO

"Stochastic Groundwater Flow Analysis in the Presence of Trends in Heterogeneous Hydraulic Conductivity Fields," *Mathematical Geology*, In press (**with Leipnik, Roy and Marino, Miguel**). (ICS contribution #0086-20HW)

LUYENDYK, BRUCE P.

"Geological and Geophysical Exploration in The Northern Ford Ranges, Marie Byrd Land, West Antarctica," *Sixth Antarctic Earth Sciences Symposium Volume*, Ranzan, Japan, September, 1991 (**with Richard, Stephen M., Smith, Christine H. and Kimbrough, David L.**). (ICS contribution #0083-32TC-22CS)

NICHOLSON, CRAIG

"Deep Crustal Structure and Tectonics in the Offshore Southern Santa Maria Basin, California," *Geology*, Vol. 20, pp. 239-242, 1992 (**with Sorlien, Christopher C. and Luyendyk, Bruce P.**). (ICS contribution #0081-22CS-31TC)

"Travel-time Tomography in the Northern Coachella Valley Using Aftershocks of the 1986 ML 5.9 North Palm Springs Earthquake," *Geophysical Research Letters*, Vol. 19, pp. 1-4, 1992 (**with Lees, Jonathan**). (ICS contribution #0082-23CS-11EQ)

OLDENBURG, CURTIS M.

"Numerical modeling of solidification and convection in a viscous pure binary eutectic system," *Int. J. Heat Mass Transfer.*, 34, no. 8, pp. 2107-2121, 1991 **(with Spera, Frank J.).** (ICS contribution #0097-12CM)

"Hybrid Model for Solidification and Convection," *Numerical Heat Transfer, Part B*, Vol. 21, pp. 217-229, 1992 **(with Spera, Frank J.).** (ICS contribution #0099-14CM)

RICHARD, STEPHEN M.

"Structure and Cooling History of the Fosdick Metamorphic Complex, Marie Byrd Land, West Antarctica," *Sixth Antarctic Earth Sciences Symposium Volume*, Ranzan, Japan, September, 1991, In press. (ICS contribution #0085-23CS)

RODGERS, PETER W.

"Frequency Limits for Seismometers as Determined from Signal-to-Noise Ratios. Part II, the Feedback Seismometer" *Bulletin Seismological Society of America*, Vol. 82, no. 2, 1992 (ICS contribution #0094-12EQ)

"The Optimum Coil Resistance, Amplifier Characteristics, and Circuit for the Electromagnetic Seismometer," Submitted to *Bulletin of the Seismological Society of America*, June 1992 (ICS contribution #0103-14EQ)

ROSENBERG, NINA D.

"The relationship between flow and permeability field in seafloor hydrothermal systems," Submitted to *Earth and Planetary Science Letters*, May 1992 **(with Haymon, R. M. and Spera, Frank J.).** (ICS contribution #0101-16CM)

"Thermohaline convection in a porous medium heated from below," *Int. J. Heat Mass Transfer.*, Vol. 35, no. 5, pp. 1261-1273, 1992 **(with Spera, Frank J.).** (ICS contribution #0130-25CM)

RUSTAD, JAMES R.

"Coordination variability and the structural components of silica glass under high pressures," *Chemical Geology*, Vol. 96, pp. 421-437, 1992 (with **Spera, Frank J. and Yuen, David A.**). (ICS contribution #0096-11CM)

"Molecular dynamics of amorphous silica at very high pressures (135 GPa): Thermodynamics and extraction of structures through analysis of Voronoi polyhedra," *Physical Review B*, Vol. 44, no. 5, pp. 2108-2121, 1991 (with **Spera, Frank J. and Yuen, David A.**). (ICS contribution #0098-13CM)

"The sensitivity of physical and spectral properties of silica glass to variations of interatomic potentials under high pressure," *Physics of the Earth and Planetary Interiors*, Vol. 65, pp. 210-230, 1991 (with **Spera, Frank J. and Yuen, David A.**). (ICS contribution #0128-23CM)

SMITH, CHRISTINE H.

"Metapelitic Migmatites at the Granulite Facies Transition, Fosdick Metamorphic Complex, Marie Byrd Land, West Antarctica," *Sixth Antarctic Earth Sciences Symposium Volume*, Ranzan, Japan, September 1991, In press (ICS contribution #0084-10CM)

SPERA, FRANK J.

"Stability of a Chemically-Layered Upper Mantle," *Physics of Earth & Planetary Interiors*, Vol. 71, pp. 85-99, 1992 (with **Todesco, Micol**). (ICS contribution #0075-10CM)

STEIDL, JAMISON

"The 1989 Loma Prieta, California, Earthquake: Are Geodetic Measurements and Rupture Models Consistent?," Submitted to *NEHRP Report to Congress, The Loma Prieta, California, Earthquake of October 17, 1989 Mainshock Characteristics, U.S. Geological Survey Prof. Paper* (with **Archuleta, Ralph J.**). (ICS contribution #0095-13EQ)

STEIN, DANIEL J.

"Rheology and microstructure of magmatic emulsions: theory and experiments," *Journal of Volcanology and Geothermal Research*, Vol. 49, pp. 157-174, 1992 (with **Spera, Frank J.**). (ICS contribution #0100-15CM)

SYLVESTER, ARTHUR

"Nearfield Interseismic Vertical Strain on the Central Garlock Fault, Southern California, 1984-1991," *Geophysical Research Letters*, In press (ICS contribution #0093-33TC)

VARIOUS AUTHORS

"Active Fault Zones in California: Southeastern California and the Eastern California Shear Zone (ECSZ)," Preliminary papers from the ECSZ Workshop, held on Sept. 4, 5, and 6, 1991, Institute for Crustal Studies, 1991 (ICS Contribution #0077-29TC)

ZEKTSER, IGOR S.

"Prevention of Ground Water Pollution - An International Perspective," Accepted pending revision in *Journal of European Water Pollution Control*, September, 1991 (with Everett, Lorne, G. and Cullen, Stephen). (ICS contribution #0079-19HW)

"Ground Water Fluxes in the Global Hydrologic Cycle: Past, Present and Future," *Journal of Hydrology*, In press (with Loaiciga, Hugo). (ICS contribution #0087-21HW)