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Education

Ph.D., Geophysics, University of Colorado at Boulder, CO, August 2000.

Dissertation: Pattern Dynamics in Southern California Seismicity, with an appendix entitled Genetic Algorithm Applications to Geophysical Inverse Problems. Advisor: Dr. J.B. Rundle.

M.S., Civil Engineering, Structural Engineering, Stanford University, Stanford, CA, 1984.

B.S., Civil Engineering, second major in geology, Tufts University, Medford, MA, 1983, *summa cum laude*.

Professional Experience

Director, Earth Science and Observation Center (ESOC) & Professor, Department of Geological Sciences, Cooperative Institute for Research in Environmental Sciences (CIRES),

University of Colorado Boulder, Boulder, Colorado, 80309 USA, August 2015-present.

Full Professor, Department of Earth Sciences, University of Western Ontario, London, Ontario, Canada, July 2012-July 2015.

Associate Chair, Department of Earth Sciences, University of Western Ontario, London, Ontario, Canada, July 2013-July 2014.

Assistant/Associate Professor, Department of Earth Sciences, University of Western Ontario, London, Ontario, Canada, September 2003.

Visiting Scholar, Universidad Complutense, Instituto de Astronomia y Geodesia, Madrid, Spain, Fall 2002 - Spring 2003.

Research Associate, Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado at Boulder, Fall 2000-Summer 2003.

Senior Project Engineer, GS-12, U.S. Army Corps of Engineers, New England Division, 1988-1994.

Project Engineer, GS-11, U.S. Army Corps of Engineers, New England Division, 1984-1988.

Lecturer, Civil Engineering, Introduction to Engineering Mechanics, Department of Civil Engineering, Tufts University, 1984.

Certifications & Awards

Faculty Scholar, University of Western Ontario, 2011-2013.

NSERC and Aon Benfield/ICLR Industrial Research Chair in Earthquake Hazard Assessment, 2006-2012.

Professional Engineer, State of Connecticut, 1990-1995.

CIRES Graduate Research Fellow, 1999-2000.

NASA Mission to Planet Earth Grant, NGT5-30025, Study and Modeling of the Magmatic Intrusion Source at Long Valley Caldera, CA, 1996-1999.

General Electric Foundation Fellowship, Stanford University, 1983-1984.

Robert L. Nichols Award, Geological Sciences, Tufts University, 1983.

BSCE/ASCE Howard P. Morse Award, Tufts University, 1983.

Tau Beta Pi, Tufts University, 1982-1983.

Publications

- Atkinson, G.M., Eaton, D., Ghofrani, H., Walker, D., Cheadle, B., Schultz, R., Shcherbakov, R., Tiampo, K., Gu, J., Harrington, R., Liu, Y., van der Baan, M., Kao, H. **Hydraulic fracturing and seismicity in the Western Canada Sedimentary Basin**, *Seismological Research Letters*, accepted for publication January 2016.
- Kropivnitskaya, Y., Tiampo, K.F., Qin, J., Bauer, M.A. **Real-time earthquake intensity estimation using streaming data analysis of social and physical sensors**, *Computers and Geosciences*, resubmitted November 2015.
- Tiampo, K.F., Shcherbakov, R., Kovacs, P. **Probability gain from seismicity-based earthquake models**, invited chapter, *Insurance Catastrophe Risk Modeling*, ed. G. Michel, submitted November 2015.
- Tiampo, K.F., McGinnis, S., Kropivnitskaya, Y., Qin, J., Bauer, M.A. **Big data challenges and hazards modeling**, invited chapter, *Insurance Catastrophe Risk Modeling*, ed. G. Michel, submitted October 2015.
- Desikan, R., Bharti, R., Tiampo, K., Lenka, P. **Are the palaeo drainage systems a 'sink' for secondary uranium accumulation? Investigations from the Thar desert, India**, *Journal of Earth System Sciences*, submitted September 2015.
- Nanda, S.J., Mansinha, L., Tiampo, K.F., Panda, G. **Partial Spectral Information of Dataset for Grouping: α Domain Clustering**, *Engineering Applications of Artificial Intelligence*, submitted February 2015.
- Kropivnitskaya, Y., Qin, J., Tiampo, K.F., Bauer, M.A. **A pipelining implementation for high resolution seismic hazard maps production**, *Procedia Computer Science*; 51, doi:10.1016/j.procs.2015.05.337, 2015.
- Ghofrani, H., Atkinson, G.M., Chouinard, L., Rosset, P., Tiampo, K.F. **Scenario shakemaps for montreal**, *Canadian Journal of Civil Engineering*, doi:10.1139/cjce-2014-0496, 2015.
- Kazemian, J., Tiampo, K.F., Klein, W., Dominguez, R. **Foreshocks and aftershocks in simple earthquake models**, *Physical Review Letters*, doi:10.1103/PhysRevLett.114.088501, 2015.
- Bru, G., Fernández, J., González, P.J., Tiampo, K.F. **Monitoring of urban-damaging landslides with satellite radar missions: Arcos de la Frontera (Spain)**. E. Pardo-Igúzquiza et al. (eds.), *Mathematics of Planet Earth*, Lecture Notes in Earth System Sciences (Springer-Verlag: Berlin), 229-233, doi:10.1007/978-3-642-32408-6_53, 2014.
- Samsonov, S.V., Tiampo, K.F., Camacho, A., Fernández, J., González, P.J. **Spatiotemporal analysis and interpretation of 1993-2013 ground deformation at Campi Flegrei, Italy, observed by advanced DInSAR**, *Geophysical Research Letters*, doi:10.1002/2014GL061307, 2014.
- Samsonov, S.V., Trishchenko, A.P., Tiampo, K.F., González, P.J., Zhang, Y., Fernández, J., **Removal of systematic seasonal atmospheric signal from interferometric synthetic aperture radar ground deformation time series**, *Geophysical Research Letters*, doi:10.1002/2014GL060595, 2014
- Samsonov, S., d'Oreye, N., González, P., Tiampo, K., Ertolahti, L., Clague, J.J. **Rapidly accelerating subsidence in the Greater Vancouver region from two decades of ERS-ENVISAT-RADARSAT-2 DInSAR measurements**, *Remote Sensing of the Environment*, doi:10.1016/j.rse.2013.12.017, 2014.
- Kazemian, J., Dominguez, R., Tiampo, K.F., Klein, W. **Spatial heterogeneity in earthquake fault-like systems**, *PAGEOPH*, doi:10.1007/s00024-014-0843-6, 2014.
- González, P.J., Singh, K.D., Tiampo, K.F. **Shallow hydrothermal pressurization prior to 2010 Mount Sinabung volcano, Indonesia eruption observed with ALOS satellite radar interferometry**, *PAGEOPH*, doi:10.1007/s00024-014-0915-7, 2014.
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- forecasting and its verification in northeast India, *Geomatics, Natural Hazards and Risk*, doi:10.1080/19475705.2014.883441, 2014.
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- Shcherbakov, R., Davidsen, J., Tiampo, K.F. **Record breaking avalanches in driven threshold systems**, *Phys. Rev. E*, 87, 052811, doi:10.1103/PhysRevE.87.052811, 2013.
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Invited Speaker

- Tiampo, K.F. **InSAR analysis of natural and anthropogenic hazards**, Pacific Geoscience Center, Sydney, British Columbia, Canada, November 2015.
- Tiampo, K.F. **InSAR analysis of natural and anthropogenic hazards**, Department of Geological Sciences, University of Colorado, October 2015.
- Tiampo, K.F., Samsonov, S., González, P.J., d'Oreye, N., Fernández, J., Camacho, A. **Advanced DInSAR time series analysis of natural and anthropogenic hazards**. IGARSS, Montreal, Canada, June, 2014.
- Tiampo K.F., Samsonov S., González P.J., Alipour S. **Quadpol InSAR analysis of earthquake hazard on the Hayward fault, CA**. IGARSS, Montreal, Canada, June 2014.
- Tiampo, K.F. **Advanced geodetic remote sensing analysis of natural and anthropogenic hazards**, New Horizons in Science. Joint Symposia: Royal Society of Canada, National Academy of Sciences, Mexican Academy of Science, Mexico City, Mexico, June 2014.
- Tiampo, K.F. **Space-time patterns in seismicity, and implications for forecasting and preparedness**. Montpelier Re, Pembroke, Bermuda, October 2013.
- Tiampo, K.F., González, P.J., Samsonov, S. **Investigation of aseismic creep on the Hayward fault, CA, using advanced polarized DInSAR methods**. IAMG, Madrid, Spain, September 2013.
- Tiampo, K.F. **Linking strain and seismicity for earthquake hazard estimation**, ICLR Workshop, Toronto, November 2012.
- Tiampo, K.F. **Earthquake Risk in Canada: Past, Present & Future**. A CPD Seminar for Actuaries on Earthquake Risk, June 2012.
- Tiampo, K.F. **Physics-based earthquake forecasting: Past, present and future**, Guy Carpenter Executive Reinsurance Seminar, Seattle, Washington, 2011.
- Tiampo, K.F., Rundle, J.B., Klein, W., Fernández, J., González, P.J. **Seismicity based earthquake forecasting**, Iberian seismic hazard workshop. A Cenozoic tectonics perspective. Madrid, Facultad de Ciencias Geológicas, Instituto de Geociencias, Campus de Excelencia Internacional, Madrid, Spain, 2011.
- Tiampo, K.F. **Seismicity based earthquake forecasting**, Lloyds Risk Insight, Toronto, Canada, 2010.
- Tiampo, K.F., Dominguez, R., Klein, W., Serino, C. **Characterizing the effect of damage in simple models of earthquake fault systems**, EXTREMES 2010: International Workshop in

Recent Achievements on the Study of Extreme Events (VW-Workshop), Potsdam, Germany, 2010.

- Tiampo, K.F. **Studying Earthquake and Tsunami Hazard**, University of Applied Sciences, Fakultät Geoinformation, Munich, Germany, 2009.
- Tiampo, K.F. **Ergodicity in Natural Fault Systems: Examples and Implications**, Evison Symposium, Wellington, New Zealand, 2008.
- Tiampo, K.F. **Earthquake Statistics in Models and Data**, 5th International Workshop on Statistical Seismology, Erice, Italy, 2007.
- Tiampo, K.F., Rundle, J.B., Bowman, D.D., Holliday, J., Klein, W., Jiménez, A., Chen, C. **Pattern recognition of historic seismicity data and earthquake forecasting**, Fall AGU meeting, San Francisco, CA, 2006.
- Tiampo, K.F., Rundle, J.B., Holliday, J., Jiménez, A., Levin, S., Klein, W., **Earthquake forecasting: Past, present, and future**, CSTARS seminar, Miami, FL, 2006.
- Tiampo, K.F., Jiménez, A., Rundle, J.B., Holliday, J., Chen, C. **Earthquake forecasting through the integration of pattern recognition techniques and seismicity data**, Eastern SSA meeting, Ottawa, ON, 2006.
- Tiampo, K.F. **Forecasting Earthquakes on the San Andreas – A Case Study**, EPICC, Vancouver, BC Canada, March 2005.
- Tiampo, K.F., Rundle, J.B., and Klein, W. **A Pattern Informatics Technique Applied to the Study of Southern California Seismicity**, SCEC Annual Meeting, Oxnard, CA, September, 2003.
- Tiampo, K.F. **Pattern dynamics analysis of southern California seismicity**. University of Granada, Spain, February, 2003.
- Tiampo, K.F., Rundle, J.B., Klein, W., and Sá Martins, J.S. **Ergodicity in natural fault systems**. Fall AGU Meeting, San Francisco, CA, December, 2002.
- Tiampo, K.F. **Pattern dynamics analysis of solid earth data sets**. University of Almeria, Spain, December, 2002.
- Tiampo, K.F., Rundle, J.B., Klein, W., and Sá Martins, J.S. **Ergodicity in natural earthquake fault systems**. Third APEC (Asia Pacific Economic Cooperation) Cooperation for Earthquake Simulation (ACES) Workshop, Computational Science, Data Assimilation, and Information Technology for Understanding Earthquake Physics and Dynamics. Maui, Hawaii, May 2002.
- Tiampo, K.F., Rundle, J.B., Gross, S.J., McGinnis, S., and Klein, W. **Eigenpattern analysis of geophysical data sets - applications to southern California**. Interface 2002, the 34th Interface Symposium, Geoscience and Remote Sensing. Montreal, Canada, April, 2002.
- Tiampo, K.F., Rundle, J.B., Klein, W., Martins, J.S., and McGinnis, S. **Pattern dynamics analysis of the California fault system**. Seminario Internacional Complutense, Geodetic and geophysical effects associated with seismic and volcanic hazards - Theory and Observation, Madrid, Spain, October, 2001.
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- Ghofrani, H., Atkinson, G., Chouinard, L., Rosset, P., Tiampo, K.F. **Scenario Shakemaps for Use in Earthquake Risk Studies in Montreal**, *11th Canadian Conference on Earthquake Engineering*, submitted April 2015.
- Nanda, S.J., Mansinha, L., Tiampo, K.F., Panda, G., Pradhan, P.M. **A Correlation Based Stochastic Partitional Algorithm for Accurate Cluster Analysis**, *International Journal of*

Signal and Imaging Systems Engineering, International Conference on Electronic Systems (ICES-2011), NIT Rourkela, accepted for publication April 2011

- González, P.J., d'Oreye, N., Sansosti, E., Tiampo, K.F., Fernández, J., **Large-scale deformation mapping over Danakil Depression (Afar, Ethiopia) from wide-swath SAR interferometric time series**, 2011 IEEE International Geoscience and Remote Sensing Symposium, Sendai, Japan, submitted January 2011.
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Other Scholarly Activities

NSERC RTI Evaluation Group (EG1506), 2015-2016.

AGU Geodesy Section representative to the AGU Spring Meeting, 2015-2016.

CGU Awards chair, May 2014-present.

Canadian representative to the Asia-Pacific Economic Cooperative (APEC) Cooperation for Earthquake Simulation (ACES), 2007-present.

NSERC Geosciences Evaluation Group (EG1506), 2011-2014.

Selection Committee, Donald L. Turcotte Award, Nonlinear Geophysics Committee, American Geophysical Union, 2008-2013.

First president of the Solid Earth Section, Canadian Geophysical Union, 2009-2011.

Reviewed CFI proposal, Spring 2014.

Reviewed proposal, Netherlands National Roadmap for Large-Scale Research Facilities, Spring 2014.

Reviewed Killam applications, Spring 2013.

NASA ROSES review panel, 2011.

Member, Portable Observatories for Lithospheric Analysis and Research Investigating Seismicity (POLARIS) Steering Committee, 2006-2011.

Member, American Geophysical Union, 1995-present.

Member, Seismological Society of America, 1995-present.

Member, Canadian Geophysical Union, 2000-present.

Member, KEGS, 2007-present.

Guest Editor, *Tectonophysics*, special issue, Critical Point Theory and Space-Time Pattern Formation in Precursory Seismicity, 2004-2006.

Guest Editor, *Pure and Applied Geophysics*, special issue from the Fifth ACES Conference on Earthquakes and Tsunamis, 2006-2008.

Guest Editor, *Pure and Applied Geophysics*, special issue from the Seventh ACES Conference on Earthquakes, 2011-2012.