

CURRICULUM VITÆ OF SUSANA CUSTÓDIO

September 14, 2009

Full Name: Susana Inês da Silva Custódio
Born: February 22nd, 1979; Lisbon, Portugal.

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Education

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| PhD | Geological Sciences University of California, Santa Barbara, USA GPA: 4.0/4.0 | Sep. 2003 — Dec 2007 |
| <i>Licenciatura</i> | Physics Engineering Instituto Superior Técnico, Lisbon, Portugal Final Average: 17/20 | Sep. 1997 — Jul. 2002 |

PhD Thesis

Title: Earthquake Rupture and Ground-Motion: The 2004 M_W 6.0 Parkfield Earthquake
Committee: Prof. R. J. Archuleta, Prof. Toshiro Tanimoto, Prof. Chen Ji, Dr. Jamie Steidl

Licenciatura Thesis

Title: Diurnal and Semi-diurnal Modulation of Seismic Noise in Fogo Island, Cape Verde
Supervisor: Prof. J. Fonseca
Thesis Grade: 19/20

Research Experience

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| Assistant Researcher 2008 – present | Centro de Geofísica da Universidade de Coimbra, Portugal Seismic Instrumentation, Real-Time Seismology Historic Seismology |
| Visiting Researcher 2008 | Institute for Crustal Studies, UCSB, USA Co-Seismic Finite-Fault Inversions, Combination of GPS and Seismic Data in Co-Seismic Studies |
| Graduate Researcher 2003 – 2007 | Institute for Crustal Studies, UCSB, USA Earthquake Source Kinematics and Dynamics, Finite-Fault Inversions, Site Effects, Seismic Hazard, Uncertainty in Geophysical Inverse Problems |
| Visiting Trainee 2003 | US Geological Survey, Menlo Park, CA, USA Volcano Seismology, Harmonic Tremor, Tidal Modulation) |
| Trainee 2001 – 2003 | ICIST, Inst. Superior Técnico, Lisbon, Portugal Seismic Instrumentation, Volcano Seismology |

Teaching Experience

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|--------------------|-------------------------|------|--------|------|
| Teaching Assistant | Thermodynamics | UCSB | Fall | 2006 |
| Graduate Mentor | Seismic Hazard Analysis | UCSB | Summer | 2006 |
| Teaching Assistant | Natural Disasters | UCSB | Winter | 2005 |
| Teaching Assistant | Seismology | UCSB | Winter | 2004 |

Supervising Experience

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| Research Supervisor April 2009 – present, FCTUC | João M. F. Narciso, masters student Real-Time Seismology, Historical Seismology |
| Research Supervisor April 2009 – present, IST | Ana Lúcia N. A. S. Domingues, masters student Moment Tensor Inversion |
| Graduate Mentor Summer 2006, UCSB | Johanna Vasquez, high school student Seismic Hazard Analysis |

Awards, Honors and Fellowships

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| Graduate Award for Research Excellence, Dept. of Earth Science, UCSB | 2007 |
| Outstanding Student Paper Award, AGU Fall Meeting | 2006 |
| Student Presentation Award, SSA Annual Meeting | 2006 |
| Graduate Award for Geophysics, Department of Earth Science, UCSB | 2005 |
| Young Scientist Research Award – Physics and Environment, Calouste Gulbenkian Foundation, Lisbon | 2002 |
| Graduate Scholarship from the Portuguese Foundation for Science and Technology, Earth Sciences (SFRH/BD/14353/2003) | 2003-2007 |

Scientific Projects

1. Principal Investigator 48 months (2009 – 2013)
ART-SEIS: Automated Real-Time broad band SEISmology in the azores-gibraltar region
Funded by Framework Program 7 – Marie Curie (FP7), EU.
PIRG03-GA-2008-230922
2. Team Member 48 months (2008 – 2012)
MIA-VITA: MITigate and Assess risk from Volcanic Impact on Terrain and human Activities
Funded by Framework Program 7 – Collaborative Projects (FP7), EU.
3. Research Assistant 36 months (2005 – 2008)
Resolution, Robustness and Dynamics Based on Inversions of Seismic and Geodetic Data of the 2004 Parkfield Earthquake.
Funded by the National Science Foundation (NSF), USA.
4. Research Assistant 24 months (2005 – 2007)
Inversion of Seismic and Geodetic Data from the 2004 Parkfield Earthquake.
Funded by the Southern California Earthquake Center (SCEC), USA.
5. Trainee (Bolsheiro de Iniciação Científica) 18 months (2002 – 2003)
TagusNet: Instrumental Study of the Active Faulting in the Lower Tagus Valley.
Funded by the Fundação para a Ciência e Tecnologia (FCT), Portugal.
POCTI CTA/32720/2000

Publications in Peer-Reviewed Journals

1. Custódio, S., M. T. Page, and R. J. Archuleta (2009). Constraining earthquake source inversions with GPS data 2: A two-step approach to combine seismic and geodetic datasets. *Journal of Geophysical Research*, 114, B01315, doi:10.1029/2008JB005746.
2. Page, M. T., S. Custódio, R. J. Archuleta, and J. M. Carlson (2009). Constraining earthquake source inversions with GPS data 1: Resolution based removal of artifacts. *Journal of Geophysical Research*, 114, B01314, doi:10.1029/2007JB005449.
3. Ma, S., S. Custódio, R. J. Archuleta, and P. Liu (2008). Dynamic modeling of the 2004 M_w 6.0 Parkfield, California, earthquake. *Journal of Geophysical Research*, 113, B02301, doi:10.1029/2007JB005216.
4. Custódio, S., and R. J. Archuleta, (2007). Parkfield earthquakes: Characteristic or complementary? *Journal of Geophysical Research*, 112, B05310, doi:10.1029/2006JB004617.
5. Liu, P., S. Custódio, and R. J. Archuleta (2006). Kinematic inversion of the 2004 M_w 6.0 Parkfield earthquake including an approximation to site effects. *Bulletin of the Seismological Society of America*, vol. 96, no. 4B, pp. S143-S158, doi:10.1785/0120050826.
6. Custódio, S., P. Liu, and R. J. Archuleta (2005). The 2004 M_w 6.0 Parkfield, California, earthquake: Inversion of near-source ground motion using multiple data sets. *Geophysical Research Letters*, vol. 32, L23312, doi:10.1029/2005GL024417.
7. Custódio, S., J. F. B. D. Fonseca, N. F. d'Oreye, B. V. E. Faria, and Z. Bandomo (2003). Tidal modulation of seismic noise and volcanic tremor. *Geophysical Research Letters*, vol. 30 (15), doi: 10.1029/2003GL016991 .

Invited Talks

1. Custódio, S., R. J. Archuleta, P. Liu, and M. T. Page (2009). On the Nature of Parkfield Characteristic Earthquakes. CGE, Universidade de Évora, Évora, Portugal
2. Custódio, S., R. J. Archuleta, P. Liu, M. T. Page, and S. Ma (2008). Earthquake Rupture and Ground-Motion: The 2004 M_w 6 Parkfield, California, Earthquake. ICIST, Instituto Superior Técnico, Lisbon, Portugal
3. Custódio, S., M. T. Page, P. Liu, and R. J. Archuleta (2008). A Two-Step Approach for Combining GPS and Seismic Data in Kinematic Inversions. Harvard University, Cambridge, MA, USA.
4. Custódio, S., P. Liu, S. Ma, M. T. Page, and R. J. Archuleta (2008). Earthquake Source Physics: Using Ground-Motion to Image Earthquake Ruptures. CNSI Scientific Computing Series, University of California, Santa Barbara, CA, USA.

5. Custódio, S., M. T. Page, P. Liu, and R. J. Archuleta (2008). A Two-Step Approach for Combining GPS and Seismic Data in Kinematic Inversions. Earthquake Physics Seminar, University of Southern California, Los Angeles, CA, USA.
6. Custódio, S., M. T. Page, and R. J. Archuleta (2007). Integrating GPS and Seismic Data in Earthquake Source Inversions. *EOS Trans. AGU, 88(52), Fall Meet. Suppl., Abstract G23A-01*. Fall Meeting of the American Geophysical Union, San Francisco, CA, USA.

Conference Presentations

1. Custódio, S., and Y. Omar (2009). SiW - MIA-VITA Project: Network of Schools for Monitoring the Volcano in Fogo Island, Cape Verde, 2009-2010. *International Seminar on Volcanic Risk Mitigation, Fogo Island, Cape Verde*, June 20–25, 2009.
2. Custódio, S., J. Batlló, J. Narciso, F. C. Lopes, C. R. Gomes, D. R. Martins, P. Ribeiro (2009). Seismic Instrumentation at the Geophysical Institute of the University of Coimbra. *International Conference on Geological Collections and Museums, Coimbra, Portugal*, June 5–6, 2009.
3. Custódio, S., J. Batlló, J. Narciso, F. C. Lopes, C. R. Gomes, D. R. Martins, P. Ribeiro (2009). Historical Seismograms at the Geophysical Institute of the University of Coimbra. *International Conference on Geological Collections and Museums, Coimbra, Portugal*, June 5–6, 2009.
4. Batlló, J., S. Custódio, D. R. Martins, C. R. Gomes, F. C. Lopes, J. Narciso, and P. Ribeiro (2009). Historical Magnetograms of the Geophysical Institute of the University of Coimbra and New Possibilities to Use Them. *International Conference on Geological Collections and Museums, Coimbra, Portugal*, June 5–6, 2009.
5. Custódio, S., A. Domingues, and J. Narciso (2009). ART-SEIS: A Project for Real-Time Seismology in Portugal. *31st Course of the International School of Geophysics – International Workshop on Real Time Seismology: Rapid Characterization of the Earthquake Source and of its Effects, Erice, Italy*, May 2–8, 2009.
6. Custódio, S. and R. J. Archuleta (2009). Parkfield Earthquakes: Characteristic or Complementary? *2nd International Seminar on Prediction of Earthquakes, Lisbon, Portugal*, Apr. 29–30, 2009.
7. Custódio, S., J. Schmedes, and R. J. Archuleta (2009). Investigation of Ground Acceleration During the 2004 M6.0 Parkfield, California, Earthquake Based on Isochrones. *Seismological Research Letters*, vol. 80(2), pp 354.
8. Custódio, S., and J. F. B. D. Fonseca (2009). Broadband Seismic Study of Western Iberia and Offshore Atlantic. *Seismological Research Letters*, vol. 80(2), pp 322.

9. Custódio, S., M. T. Page, and R. J. Archuleta (2009). Combining Different Datasets in Earthquake Source Inversions. *6^o Simpósio da Associação Portuguesa de Meteorologia e Geofísica, Caparica, Portugal*, Mar. 16–19, 2009.
10. Custódio, S., M. T. Page, and R. J. Archuleta (2007). A New Approach for Combining GPS and Seismic Data in Kinematic Inversions. *EOS Trans. AGU, 88(52), Fall Meet. Suppl., Abstract S53C-05*.
11. Page, M. T., S. Custódio, R. J. Archuleta, and J. M. Carlson, (2007). Using Resolution Information to Remove Artifacts from GPS Inversions. *EOS Trans. AGU, 88(52), Fall Meet. Suppl., Abstract S51B-0499*.
12. Archuleta, R. J., P. Liu, S. Custódio, and M. T. Page (2007). Improving on Inversions for Kinematic Parameters of the Earthquake Source. *EOS Trans. AGU, 88(52), Fall Meet. Suppl., Abstract S53C-02*.
13. Custódio, S., M. T. Page, K. Larson, and R. J. Archuleta (2007). Combining Different Datasets to Obtain a Rupture Model: The 2004 M6.0 Parkfield, California, Earthquake. *Seismological Research Letters*, vol. 78(2), pp 302.
14. Page, M. T., S. Custódio, R. J. Archuleta, and J. M. Carlson (2007). Resolution of GPS Data from the 2004 Mw6.0 Parkfield Earthquake. *Seismological Research Letters*, vol. 78(2), pp 289.
15. Custódio, S., and R. J. Archuleta (2006). b-Values as a Proxy for Stress – Inferences for Dynamic Modeling of the 2004 Parkfield Earthquake. *EOS Trans. AGU, 87(52), Fall Meet. Suppl., Abstract S23C-0167*.
16. Archuleta, R. J., S. Custódio, and S. Ma (2006). Effect of Realistic 3D-Velocity Structure on Rupture Dynamics and Ground- Motion. *EOS Trans. AGU, 87(52), Fall Meet. Suppl., Abstract S53D-05*.
17. Page, M. T., S. Custódio, R. J. Archuleta, and J. M. Carlson (2006). Resolution of GPS data from the 2004 Mw6.0 Parkfield Earthquake. *EOS Trans. AGU, 87(52), Fall Meet. Suppl., Abstract NS31C-1582*.
18. Ma, S., R. J. Archuleta, S. Custódio, and P. Liu (2006). Dynamic Modeling of the 2004 Mw 6.0 Parkfield Earthquake. *EOS Trans. AGU, 87(52), Fall Meet. Suppl., Abstract S32A-03*.
19. Custódio, S., S. Ma, and R. J. Archuleta (2006). Modeling Earthquake Dynamic Ruptures in Realistic 3D Heterogeneous Material – Preliminary Results. *Annual Meeting of the Southern California Earthquake Center, Palm Springs, California*, Sep. 10-13, 2006.

20. Page, M., S. Custódio, R. J. Archuleta, and J. M. Carlson (2006). Resolution of GPS data from the 2004 Mw6.0 Parkfield Earthquake. *Annual Meeting of the Southern California Earthquake Center, Palm Springs, California*, Sep. 10-13, 2006.
21. Custódio, S., and R. J. Archuleta (2006). The Parkfield Section of the San Andreas Fault, California: Characteristic or Complementary Earthquake Ruptures? *International workshop on comparative studies of the North Anatolian Fault and the San Andreas Fault (Southern California)*, Istanbul Technical University, Turkey, Aug. 14-18, 2006.
22. Page, M., S. Custódio, R. J. Archuleta, and J. M. Carlson (2006). Source Inversion Resolution Analysis of the 2004 Mw6.0 Parkfield Earthquake. *International workshop on comparative studies of the North Anatolian Fault and the San Andreas Fault (Southern California)*, Istanbul Technical University, Turkey, Aug. 14-18, 2006.
23. Heleno, S. I. N., J. F. B. D. Fonseca, S. Custódio, and B. V. E. Faria (2006). Unusual Volcanic Tremor Observations from Fogo Island, Cape Verde. *IV Jornadas Internacionais de Vulcanologia do Pico, Azores*, May 2-3, 2006.
24. Custódio, S., P. Liu, R. J. Archuleta, and K. Larson (2006). Kinematic Inversion of the 2004 M_w 6 Parkfield Earthquake from Strong Motion Seismic Data and High-rate GPS Data. *Seismological Research Letters*, vol. 77(2), pp 289.
25. Custódio, S., R. J. Archuleta, and P. Liu (2006). Kinematic Rupture Model for the 1966 M_w 6 Parkfield Earthquake with Assessment of Resolution. *Seismological Research Letters*, vol. 77(2), pp 243.
26. Custódio, S., P. Liu, and R. J. Archuleta (2005). The 2004 Parkfield Earthquake and its Relation to the Surrounding Fault-Zone Structure. *EOS Trans. AGU, 86(52), Fall Meet. Suppl., Abstract S53A-1086*.
27. Archuleta, R. J., S. Custódio, and P. Liu (2005). Comparison Between the Ruptures of the 1966 and 2004 Mw6 Parkfield Earthquakes. *EOS Trans. AGU, 86(52), Fall Meet. Suppl., Abstract S52A-05*.
28. Ma, S., S. Custódio, P. Liu, and R. J. Archuleta (2005). Spontaneous Rupture Modeling of the 2004 Parkfield Earthquake With Estimates of the Fracture and Radiated Energy. *EOS Trans. AGU, 86(52), Fall Meet. Suppl., Abstract S33C-02*.
29. Lavallée, D., S. Custódio, P. Liu, and R. J. Archuleta (2005). On the Random Nature of Earthquake Source and Ground Motion: the 2004 Parkfield Earthquake. *EOS Trans. AGU, 86(52), Fall Meet. Suppl., Abstract S13B-0200*.
30. Archuleta, R. J., S. Custódio, and P. Liu (2005). Resolving the Source Parameters of the Parkfield Earthquake By Multiple Inversions of Different Data Sets. *Symposium on*

Strong Ground Motion Prediction and Seismic Exploration in Urban Areas, Earthquake Research Institute, University of Tokyo, Japan, Oct. 25-27, 2005.

31. Custódio, S., P. Liu, and R. J. Archuleta (2005). 2004 Parkfield Kinematic Inversion Using Strong-Motion Data Corrected by Site Effects. *Annual Meeting of the Southern California Earthquake Center, Palm Springs, California*, Sep. 11-14, 2005.
32. Lavallée, D., S. Custódio, and P. Liu (2005). On the Random Nature of Earthquake Processes: A Case Study the 2004 Parkfield Earthquake. *Annual Meeting of the Southern California Earthquake Center, Palm Springs, California*, Sep. 11-14, 2005.
33. Custódio, S., P. Liu, and R. J. Archuleta (2005). Prediction of Near-source Ground Motion for the 2004 Mw 6.0 Parkfield Earthquake: Effects of Using Different Data Sets in the Inversion. *Seismological Research Letters*, vol. 76(2), pp 211.
34. Liu, P., S. Custódio, and R. J. Archuleta (2005). Finite-fault Model of the 2004 Mw 6.0 Parkfield Earthquake from Inversion of Strong-motion Data. *Seismological Research Letters*, vol. 76(2), pp 210.
35. Custódio, S., J. F. B. D. Fonseca, B. V. E. Faria, and N. d'Oreye (2005). Tidal Modulation of seismic noise and volcanic tremor in Fogo island, Cape Verde. *International Workshop on Ocean Island Volcanism, Sal Island, Cape Verde Republic*.
36. Heleno, S., S. Custódio, B. Faria, and Z. Bandomo (2004). Volcanic tremor observations in Fogo Island, Cape Verde. *6th National Congress of Seismology and Earthquake Engineering and International Workshop, Universidade do Minho, Portugal*, pp. 966.
37. Custódio, S. and S. I. Heleno (2004). Unusual Volcanic Tremor Observations in Fogo Island, Cape Verde. *EOS Trans. AGU, 85(52), Fall Meet. Suppl., Abstract V14B-04*.
38. Custódio, S., J. F. B. D. Fonseca, B. V. E. Faria and N. d'Oreye (2002). Tidal Modulation of the Volcanic Tremor in the Fogo Island, Cape Verde. *XXVIII General Assembly of the ESC, 1-6 September 2002 (Book of abstracts and papers)*, pp.51.
39. Custódio, S., Z. Bandomo, B.V.E. Faria, N. d'Oreye, S. Heleno, and J. F. B. D. Fonseca (2002). Semi-diurnal Modulation of the Seismic Noise in the Fogo Island, Cape Verde, and its Possible Causes. *Proceedings of the 3^a Assembleia Hispano-Portuguesa de Geodesia y Geofisica, 4-8 February 2002*, pp.234.

Book Reviews

1. "The 1755 Lisbon Earthquake: Revisited", eds. Luiz A. Mendes-Victor, Carlos Sousa Oliveira, João Azevedo, and António Ribeiro, Geotechnical, Geological and Earthquake Engineering Series, vol. 7, Springer, 2009; to be published in: *Pure Appl. Geophys.* 167 (2010).

2. “Introduction to Planetary Sciences: The Geological perspective”, by G. Faure and T.M.Mensing, Springer, 2007; to be published in: Pure Appl. Geophys. 166, N. 12 (2009)
3. “Fundamentals of Physical Volcanology”, by Elisabeth A. Parfitt and Lionel Wilson, Blackwell Publishing, 2008; in: Pure Appl. Geophys. 165 (2008): 1968-1969.

Outreach and Education

1. Teaching Assistant, Young Geoscientists Congress, Universidade de Coimbra, 2009.
2. Keynote Speaker, Science Talk Series – “Tertúlia de Cultura Científica”, Club Setubalense, 2009.
3. Coordinator, regular visits of schools to the Geophysical Institute of the University of Coimbra, Universidade de Coimbra, Oct 2008 – present.
4. Volunteer, Physics Week, Instituto Superior Técnico, 1999.
5. Coordinator, Evenings of Astronomical Observations, Instituto Superior Técnico, 1998.
6. Coordinator, Physics Week, Instituto Superior Técnico, 1998.
7. Volunteer, Physics Week, Instituto Superior Técnico, 1997.

Academic Service

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| Graduate Student Representative | Earth Science Dpt., UCSB | 2005 – 2006 |
| Undergraduate Student Representative | Physics Dpt., IST | 1997 – 2000 |
| Director | Physics Student Association, IST | 1998 |

Professional Memberships

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| American Geophysical Union | 2004 – present |
| Seismological Society of America | 2004 – present |

Leaves

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| Maternity Leave | June 2007 – December 2007 |
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Language Skills

Portuguese — Mother tongue.

English — Fluent.

Grade A in the *Certificate of Proficiency in English*, by the University of Cambridge.
September 1987 – June 1997.

French — Very good knowledge.

Grade 14/20 in the *Diplôme de Langue Française*, by the Alliance Française.
September 1991 – July 1999.

German — Elementary knowledge.

Grade *Gut* in the *Zertifikat Deutsch*, by the Goethe Institut.
September 1997 – July 2003.

Danish — Elementary knowledge.

Attendance of two intensive courses in the Department of Nordic Philology, University of
Copenhagen, Denmark.
August 2000 – June 2001.

Italian — Elementary knowledge.

Attendance of introductory courses in the Department of French and Italian at the Univer-
sity of California, Santa Barbara, USA.
January 2004 – December 2004.

Spanish — Elementary knowledge.