

Adrien Arnulf

Curriculum Vitae - Resume

Institute of Geophysics and Planetary Physics
Scripps Institution of Oceanography
University of California, San Diego
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Education

Ph.D., Geophysics, Institut de Physique du Globe de Paris	2011
M.S., Geophysics, Institut de Physique du Globe de Paris	2008
B.S., Earth Science, Université Claude Bernard (Lyon 1)	2006

Professional Experience

Postdoc, Scripps Institution of Oceanography, UC San Diego	2012-present
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Awards

Cecil and Ida Green postdoctoral Scholarship	2012-present
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Research Interests

- Seismic inversion techniques and numerical geophysics
- Full waveform inversion and wavefield-based techniques
- First arrival tomography
- Reflection seismology
- Mid-ocean ridge processes
- Oceanic crustal structure
- Ridge to trench processes

Professional Societies

American Geophysical Union
European Geophysical Union
Society of Exploration Geophysicists

A. Publication

7. **A. F., Arnulf**, S. C., Singh and J., Pye, Seismic evidence of a complex multi-sill magma reservoir beneath the 9°N Overlapping Spreading Center at the East Pacific Rise, *Geophysical Research Letters*, 41, doi:10.1002/2014GL060859 (2014).
6. **A. F., Arnulf**, A. J., Harding, G. M., Kent, S. M., Carbotte, J. P., Canales and M. R., Nedimovic, Anatomy of an active submarine volcano, *Geology*, 48(8), 655-658, doi:10.1130/G35629.1 (2014).
5. **A. F., Arnulf**, A. J., Harding, S. C., Singh, G. M., Kent and W., Crawford, Nature of upper crust beneath the Lucky Strike volcano using elastic full waveform inversion of streamer data, *Geophysical Journal International*, 196, 1471-1491, doi: 10.1093/gji/ggt461 (2014).
4. **A. F., Arnulf**, A. J., Harding, G. M., Kent, S. C., Singh and W., Crawford, Constraints on the shallow velocity structure of the Lucky Strike volcano, Mid-Atlantic Ridge, from downward continued multi-channel streamer data, *Journal of Geophysical Research*, 119, 1119-1144, doi:10.1002/2013JB010500 (2014).
3. **A. F., Arnulf**, A. J., Harding, S. C., Singh, G. M., Kent and W., Crawford, Fine-scale velocity structure of Layer 2A from full waveform inversion of downward continued seismic reflection data at the Lucky Strike Volcano, Mid-Atlantic Ridge, *Geophysical Research Letters*, 39, L08303 (2012).

2. **A. F., Arnulf**, S. C., Singh, A. J., Harding, G. M., Kent and W., Crawford, Strong seismic heterogeneity in layer 2A near hydrothermal vents at the Mid-Atlantic Ridge, *Geophysical Research Letters*, 38, L13320 (2011).
1. A., Le Friant, G., Boudon, **A. F., Arnulf** and R. E. A., Robertson, Debris avalanche deposits offshore St. Vincent (West Indies): Impact of flank-collapse events on the morphological evolution of the island. *Journal of Volcanology and Geothermal Research*, 179, 1-10 (2009).

B. Seminars

- November 2014: Lamont Doherty Earth Observatory, Columbia University, New York, NY. “High-resolution seismic imaging of Axial volcano, Juan de Fuca Ridge”.
- October 2014: University of California, Berkeley, CA. “Anatomy of an active submarine volcano using wavefield based techniques”.
- October 2014: Stanford University (SEP group), CA. “The art of Twisting! Strengths and limitations of 2D elastic FWI and RTM. First steps towards a 3D implementation.”
- October 2014: Stanford University, CA. “Anatomy of an active submarine volcano using wavefield based techniques”.
- June 2014: San Diego State University, San Diego, CA. “Anatomy of an active submarine volcano using wavefield based techniques”.
- Mai 2014: Lamont Doherty Earth Observatory, Columbia University, New York, NY. “Anatomy of an active submarine volcano using wavefield based techniques”.
- Avril 2014: University of Nevada Reno, Nevada Seismological laboratory, Reno, NV. “Anatomy of an active submarine volcano”.
- January 2014: University of Texas at Austin, Institute for Geophysics, Austin, TX. “Anatomy of an active submarine volcano”.

C. International Meeting

10. **A. F., Arnulf**, A. J., Harding and G. M., Kent, High-Resolution imaging of Axial volcano, Juan de Fuca Ridge. In AGU Fall Meeting Abstract V23E-06, San Francisco (2014).
9. **A. F., Arnulf**, Anatomy of an active submarine volcano. In SEG-AGU Summer Research Workshop, Advances in Active+Passive “Full Wavefield” Seismic Imaging: from reservoirs to plate tectonics, Vancouver (2014).
8. **A. F., Arnulf**, A. J., Harding and G. M., Kent, A large magma chamber and complex magma delivery system revealed beneath Axial volcano. In AGU Fall Meeting Abstract OS43A-1886, San Francisco (2014).
7. A. J., Harding, **A. F., Arnulf**, A., Henig and D., Blackman, Structure of Atlantis Massif, Oceanic Core Complex from Waveform Inversion. IASPEI Meeting, Gothenburg, Sweden (2013).
6. **A. F., Arnulf**, A. J., Harding and G. M., Kent, Crustal structure of Axial Volcano on the Juan de Fuca Ridge, from seafloor depths to the bottom of the magma chamber, using elastic full waveform inversion. In EGU Annual Meeting Abstract EGU2013-6301, Vienna (2013).
5. A. J., Harding and **A. F., Arnulf**, Crustal structure in the vicinity of Hole U1309D, Atlantis Massif. In AGU Fall Meeting Abstract S11E-08, San Francisco (2012).
4. **A. F., Arnulf**, A. J., Harding and G. M., Kent, Elastic full waveform inversion reveals the fine-scale structure of Axial Volcano on the Juan de Fuca Ridge. In AGU Fall Meeting Abstract OS13D-1764, San Francisco (2012).
3. **A. F., Arnulf**, A. J., Harding, S. C., Singh, G. M., Kent and W., Crawford, Layer 2A controversy resolved using full waveform inversion of downward continued seismic reflection data at the Lucky Strike volcano, Mid-Atlantic Ridge. In AGU Fall Meeting Abstract OS22A-03, San Francisco (2011).

2. **A. F., Arnulf**, S. C., Singh, A. J., Harding, G. M., Kent and W., Crawford, Seismic Structure of Volcanic Edifice and Lava Lake at the Lucky Strike Volcano, Mid-Atlantic Ridge. In AGU Fall Meeting Abstract V11A-2231, San Francisco (2010).
1. **A. F., Arnulf**, A. J., Harding, G. M., Kent and S. C., Singh, A three dimensional tomographic velocity model above Mid Atlantic magma chamber from simulated seafloor multi-channel refraction experiment. In AGU Fall Meeting Abstract S52A05, San Francisco (2009).

Contracts and Grants

Title	Agency	Amount	Period	Role
Collaborative Research: Next Generation Imaging of Magmatic Processes beneath the Juan de Fuca Ridge using MCS data.	NSF MG&G- 1357076	\$271,484	4/15/14- 3/31/16	Postdoc
Seismic Reflectivity within Atlantis Massif: Examining Alteration Pathways & Extending Velocity Models to Greater Depths.	NSF OCE- 1130709	\$310,852	9/1/11- 8/31/13	Postdoc
Collaborative Research: Advanced MCS Processing of the SISMOMAR 3D Data Volume: Exploring the Linkages within the Magmatically Driven Hydrothermal System of the Lucky Strike Volcano (MAR, 37°N).	NSF OCE- 0826481	\$273,860	9/1/09- 8/31/11	Ph.D. student