

## Education

### Ph.D. Stanford University, 09/1998-09/2005

- Ph.D. in Geophysics with the Stanford Exploration Project.
- Thesis: Multidimensional Seismic Noise Attenuation.
- *Advisor:* Jon Claerbout.

### M.Sc. Stanford University, 09/1998-06/2000

- M.Sc. Geophysics with the Stanford Exploration Project.
- *Advisor:* Jon Claerbout.

### M.Sc. Ecole de Physique du Globe de Strasbourg, 1993-1996

- Engineering diploma and D.E.A in Geophysics (M.Sc.) with honors.

## Experience

### 3DGeo Inc., Santa Clara, California, 2007-present

- *Vice President R&D*

### 3DGeo Development Inc., Santa Clara, California, 2005-2007

- *Senior Geophysicist*

### Stanford University, Stanford, California, 2005-present

- *Consulting professor in Geophysics.*

### Stanford University, Stanford, California, 1998-2005

- *Research Assistant, SEP*
- Research on coherent noise attenuation, robust optimization criteria (L1 and Huber norms) and migration issues (migration of multiples).

### Chevron, San Ramon, California, 2003

- *Summer Intern*
- Worked in the imaging and velocity group.

### Schlumberger Cambridge Research Lab, England, 2002

- *Summer Intern*
- Worked on coherent noise attenuation techniques for land data.

### Delft University, Delft, The Netherlands, 2001

- *Research Assistant*
- Exchange student with the DELPHI consortium sponsored by the SMAART Joint Venture.
- Worked on internal multiples elimination with the L1 norm and on the migration of multiples.

### CGG, Massy Palaiseau, France, 1999

- *Summer Intern*
- Worked on internal multiples elimination.
- Co-developed a related batch in Geovecteur (CGG processing software).

### CGG, Houston, USA, 1997-1998

- *Research Assistant*
- Worked on new techniques for surface-related multiples attenuation in the Gulf of Mexico.
- Worked on the AVO of converted waves.

### IFP, Reuil Malmaison, France, 1996-1997

- *Research Assistant*
- Worked on true amplitude migration of well data (walkaways and VSPs).

## Professional Activities

2006-present: Special Editor for Geophysics (SEG publication)

1998-present: Member of the SEG

1998-present: Member of the EAGE

## Awards

SEG Clarence Karcher Award, 2007 (outstanding young geophysicist)  
EAGE Arie Van Weelden award, 2004 (outstanding young geophysicist).  
SEG best student paper, 1999.

## Computer Skills

Programming in Fortran 77 and 90, C, Matlab, python.  
Unix, Windows, Red Hat (Linux).  
Administrator of 30 Linux boxes at the Stanford Exploration Project.

## Languages

French (native speaker).  
English (9 years in USA).  
Spanish (6 years at school).

## Publications

### Peer review publications (printed or in press):

#### 2007

1. Guitton, A and Kaelin, B, 2006, Least-square attenuation of reverse-time migration artifacts, **Geophysics**, 72, S19.
2. Guitton, A, Valenciano, A, Bevc, D and Claerbout, J, 2006, Smoothing imaging condition for shot-profile migration, **Geophysics**, 72, S149.
3. Haines, S., Guitton, A. and Biondo, B, 2007, Seismoelectric data processing for surface surveys of shallow targets, **Geophysics**, 72, G1
4. Alvarez, G, Biondi, B. and Guitton, A., 2007, Attenuation of specular and diffracted 2D multiples in image space, **Geophysics**, 72, V97
5. Wilson, C. K. and Guitton, A., 2007, Teleseismic Wavefield Interpolation and Signal Extraction using High Resolution Linear Radon Transforms, **Geophysical Journal International**, 168, 171-181.

#### 2006

6. Fomel, S and Guitton, A, 2006, Model preconditioning by plane-wave construction in geophysical estimation problems, **Geophysics**, 71, A43-A47.
7. Valenciano, A, Biondi, B, and Guitton, A, 2006, Target oriented wave-equation inversion, **Geophysics**, 71, A35-A38.
8. Lomask, J., Guitton, A., Fomel, S., Claerbout, J., and Valenciano, A., 2006, Flattening without picking, **Geophysics**, 71, P13-P20.

#### 2005

9. Guitton, A., 2005, A pattern-based approach for multiple removal applied to a 3D Gulf of Mexico dataset, **Geophysical Prospecting**, 54, 135-152.

10. Wilson, C. K. and Guitton, A., 2005, Teleseismic Wavefield Interpolation and Signal Extraction using High Resolution Linear Radon Transforms, **Geophysical Journal International**, In press.
11. Brown, M. P. and Guitton, A., 2005, Least-squares joint imaging of multiples and primaries, **Geophysics**, 70, S79-S89.
12. Guitton, A., 2005, Multiple attenuation in complex geology with a pattern-based approach, **Geophysics**, 70, V97-V107.
13. Sava, P. and Guitton, A., 2005, Multiple attenuation in the image space, **Geophysics**, 70, V10–V20.

## **2004**

14. Guitton, A., 2004, Amplitude and kinematic corrections of migrated images for nonunitary imaging operators, **Geophysics**, 69, 1017-1024.
15. Guitton, A. and Verschuur, D.J., 2004, Adaptive subtraction of multiples with the L1 norm, **Geophysical Prospecting**, 52, 27-38.
16. Guitton, A. and Claerbout, J., 2004, Interpolation of bathymetry data from the Sea of Galilee: A noise attenuation problem, **Geophysics**, 69, 608-616.

## **2003**

17. Guitton, A. and Symes, W., 2003, Robust inversion of seismic data using the Huber norm, **Geophysics**, 68, 1310-1319.

## **Conferences and other publications:**

## **2007**

- A. Guitton, B. Kaelin, F. Ortigosa, D. Bevc, C. A. Fernandez, J. Higginbotham, B. Fontecha and J. M. Cela, 2007, 3D Modeling and Migration of a Wide-Azimuth Towed Streamer Survey, SBGf conference, extended abstract.
- Jesse Lomask and Antoine Guitton, 2007, Volumetric Flattening: an interpretation tool, **The Leading Edge**, 26, 888.
- Antoine Guitton, Francisco Ortigosa and Bruno Kaelin, 2007, 3D Migration of a Simulated Wide-Azimuth Towed Streamer Survey, SEG, Expanded Abstracts, 26, 2310-2313.
- Antoine Guitton, Francisco Ortigosa and Bruno Kaelin, 2007, Imaging methods in complex overburden, EAGE conference, extended abstract, C023.
- Bruno Kaelin, Antoine Guitton and Francisco Ortigosa, 2007, Illumination Effects in Reverse Time Migration, EAGE conference, extended abstract, P285.
- Dimitri Bevc, Francisco Ortigosa, Antoine Guitton and Bruno Kaelin, 2007, Next Generation Seismic Imaging: High Fidelity Algorithms and High-End Computing, AGU General Assembly, Acapulco.

## **2006**

- Antoine Guitton and Bruno Kaelin, 2006, Least-square attenuation of reverse-time migration artifacts,

SEG, Expanded Abstracts, 2348-2351

- Antoine Guitton, Alejandro Valenciano, Dimitri Bevc and Jon Claerbout, 2006, Robust imaging condition for shot-profile migration, SEG, Expanded Abstracts, 2594-2597.
- Jesse Lomask and Antoine Guitton, 2006, Flattening with geological constraints, SEG, Expanded Abstracts, 1053-1056.
- Antoine Guitton, Alejandro Valenciano, Dimitri Bevc and Jon Claerbout, 2006, Robust Illumination Compensation for Shot-Profile Migration, EAGE conference, extended abstract, P265.

## 2005

- Sergey Fomel and Antoine Guitton, 2005, Model preconditioning by plane-wave construction in geophysical estimation problems, SEG Expanded Abstracts, 2601-2604.
- Antoine Guitton, Jesse Lomask and Sergey Fomel, 2005, Non-linear estimation of vertical delays, SEG Expanded Abstracts, 841-844.
- Alejandro Valenciano, B. Biondi, and A. Guitton, 2005, Target-oriented wave-equation inversion: 75th Annual International Meeting, SEG, Expanded Abstracts, 1662-1665.
- Antoine Guitton, 2005, Sparse Radon Transforms with Bound-Constrained Optimization, EAGE Meeting.

## 2004

- Alejandro A. Valenciano, Morgan Brown, Antoine Guitton, and Mauricio D. Sacchi, 2004, Interval velocity estimation using edge-preserving regularization SEG Expanded Abstracts 23, 2431.
- Kevin Wolf, Daniel Rosales, Antoine Guitton, and Jon Claerbout, 2004, Robust moveout without velocity picking, SEG Expanded Abstracts 23, 2423.
- Antoine Guitton, Jon Claerbout, and Jesse Lomask, 2004, First order lateral interval velocity estimates without picking, SEG Expanded Abstracts 23, 2339.
- Morgan Brown and Antoine Guitton, 2004, Efficient prestack modeling and imaging of pegleg multiples, SEG Expanded Abstracts 23, 2148.
- Gabriel Alvarez, Biondo Biondi, and Antoine Guitton, 2004, Attenuation of diffracted multiples in angle domain common image gathers, SEG Expanded Abstracts 23, 1301.
- Guojian Shan and Antoine Guitton, 2004, Migration of surface-related multiples: tests on the Sigsbee2B dataset, SEG Expanded Abstracts 23, 1285.

## 2003

- Antoine Guitton, 2003, Multiple attenuation with multidimensional prediction-error filters, 73<sup>nd</sup> Ann. Internat. Mtg: Soc. of Expl. Geophys. , 1945.
- Antoine Guitton, 2003, Amplitude and kinematic corrections of migrated images for non-unitary imaging operators, 73<sup>nd</sup> Ann. Internat. Mtg: Soc. of Expl. Geophys. , 933.
- Paul Sava and Antoine Guitton, 2003, Multiple attenuation in the image space, 73<sup>nd</sup> Ann. Internat. Mtg: Soc. of Expl. Geophys. , 1933.
- Seth Haines, Antoine Guitton, Biondo Biondi and Steve Pride, 2003, Development of experimental methods in electroseismics, 73<sup>nd</sup> Ann. Internat. Mtg: Soc. of Expl. Geophys., 560.

- Antoine Guitton, 2003, What can we do with a model of the multiples ? Presented in Workshop: Strategies towards Multi-dimensional Multiple Attenuation, 65rd Mtg.: Eur. Assn. of Expl. Geophys.

## 2002

- Antoine Guitton, 2002, Shot-profile migration of multiple reflections, 72<sup>nd</sup> Ann. Internat. Mtg: Soc. of Expl. Geophys., 1296-1299.
- Antoine Guitton, 2002, Coherent noise attenuation using inverse problems and prediction-error filters: **First Break**, 20, no. 03, 161-167.

## 2001

- Antoine Guitton, Morgan Brown, James Rickett, and Robert Clapp, 2001, Multiple attenuation using a t-x pattern-based subtraction method, 71st Ann. Internat. Mtg: Soc. of Expl. Geophys., 1305-1308.
- Antoine Guitton, 2001, Coherent Noise Attenuation Using Inverse Theory and Prediction Error Filters, 63rd Mtg.: Eur. Assn. of Expl. Geophys., Session: P159.
- James Rickett, Antoine Guitton, and Doug Gratwick, 2001, Adaptive Multiple Subtraction with Non-Stationary Helical Shaping Filters, 63rd Mtg.: Eur. Assn. of Expl. Geophys., Session: P167.

## 1999

- Antoine Guitton and Guillaume Cambois, 1999, Multiple elimination using a pattern-recognition technique: **The Leading Edge**, 18, no. 1, 92-98.
- Antoine Guitton and William Symes, 1999, Robust and stable velocity analysis using the Huber function, 69th Ann. Internat. Mtg: Soc. of Expl. Geophys., 1166-1169.

## 1998

- Antoine Guitton and Guillaume Cambois, 1998, Prestack elimination of complex multiples: A Gulf of Mexico subsalt example, 68<sup>th</sup> Ann. Internat. Mtg: Soc. of Expl. Geophys., 1329-1332.
- Guillaume Cambois and Antoine Guitton, 1998, Prestack Elimination of Complex Multiples - a Gulf of Mexico Example , 60th Mtg.: Eur. Assn. Geosci. Eng., Session:01-25.

## **Stanford Exploration Project annual reports:**

### **SEP 125**

- G. Alvarez and A. Guitton, Simultaneous adaptive matching of primaries and multiples with non-stationary filters: **SEP-125**, 61-76.

### **SEP 124**

- J. Lomask and A. Guitton, Flattening with geological constraints: **SEP-124**, 105-114.

### **SEP 123**

- A. Valenciano, B. Biondi, and A. Guitton, Target-oriented wave-equation inversion: Sigsbee model: **SEP-123**, 83-90.

## **SEP 120**

- A. Valenciano, B. Biondi, and A. Guitton, Target-oriented wave-equation inversion: **SEP-120**, 23-40.
- A. Guitton, Sparse radon transforms with a bound-constrained approach: **SEP-120**, 387-394.
- A. Guitton, J. Lomask, and S. Fomel, Non-linear estimation of vertical delays with a quasi-Newton method: **SEP-120**, 167-178.
- C. K. Wilson and A. Guitton, Interpolation and signal extraction of teleseismic wavefields with the linear radon transform: **SEP-120**, 197-216.
- J. Lomask, A. Guitton, and A. Valenciano, Flattening without picking faults: **SEP-120**, 159-166.
- J. Lomask, A. Guitton, S. Fomel, and J. Claerbout, Update on flattening without picking: **SEP-120**, 137-158.
- B. Artman and A. Guitton, Removal of linear events with combined radon transforms: **SEP-120**, 395-406.
- D. A. Rosales and A. Guitton, Multiple attenuation: Data space vs. image space--A real data example: **SEP-120**, 375-386.

## **SEP 117**

- A. Guitton, Bound constrained optimization: application to the dip estimation problem: **SEP-117**, 51-62.

## **SEP 115**

- D. A. Rosales and A. Guitton, Ocean-bottom hydrophone and geophone coupling: **SEP-115**, 57-70.
- A. Guitton, Multidimensional multiple attenuation in complex geology: illustration on the Sigsbee2B dataset: **SEP-115**, 109-126.
- A. Guitton, Subtraction of surface-related multiples: adaptive subtraction vs. pattern recognition: **SEP-115**, 127-138.
- G. Alvarez, B. Biondi, and A. Guitton, Attenuation of diffracted multiples with an apex-shifted tangent-squared radon transform in image space: **SEP-115**, 139-152.
- G. Shan and A. Guitton, Migration of surface-related multiples: tests on the Sigsbee2B dataset: **SEP-115**, 153-162.
- A. Guitton, J. Claerbout, and J. Lomask, First-order lateral interval velocity estimates without picking: **SEP-115**, 249-264.
- K. Wolf, D. Rosales, A. Guitton, and J. Claerbout, Robust moveout without velocity picking: **SEP-115**, 273-282.
- J. Lomask and A. Guitton, Analytical flattening with adjustable regularization: **SEP-115**, 367-382.
- A. Guitton and I. Vlad, Imaging oceanic thermohaline structure with reflection seismology: **SEP-115**, 410-416.

## **SEP 114**

- A. Valenciano, M. Brown, M. D. Sacchi, and A. Guitton, Interval velocity estimation using edge-

preserving regularization: **SEP-114**, 136-150.

### **SEP 113**

- A. Guitton, A comparison of three multiple-attenuation methods for a Gulf of Mexico dataset: **SEP-113**, 1-16.
- P. Sava and A. Guitton, Multiple attenuation in the image space: **SEP-113**, 31-44.
- S. Haines, A. Guitton, and P. Sava, Multiple suppression in the angle domain with non-stationary prediction-error filters: **SEP-113**, 45-56.
- A. Guitton, Multiple attenuation with multidimensional prediction-error filters: **SEP-113**, 57-74.
- A. Guitton, Amplitude balanced PEF estimation: **SEP-113**, 261-276.
- S. Haines and A. Guitton, Coherent noise suppression in electroseismic data with non-stationary prediction-error filters: **SEP-113**, 277-284.
- A. Guitton, Subtraction versus filtering for signal/noise separation: **SEP-113**, 285-290.
- A. Guitton, Amplitude and kinematic corrections of migrated images for non-unitary imaging operators: **SEP-113**, 349-362.
- A. Guitton and J. Claerbout, Interpolation of bathymetry data from the Sea of Galilee: A noise attenuation problem: **SEP-113**, 399-416.

### **SEP 111**

- A. Guitton, Shot-profile migration of multiple reflections: **SEP-111**, 17-33.
- A. Valenciano, B. Biondi, and A. Guitton, Multidimensional imaging condition for shot profile migration: **SEP-111**, 71-81.
- A. Guitton and E. Verschuur, Adaptive subtraction of multiples with the l1-norm: **SEP-111**, 157-171.
- A. Guitton, A hybrid adaptive subtraction method: **SEP-111**, 171-183.
- S. Haines and A. Guitton, Removal of coherent noise from electroseismic data: **SEP-111**, 183-201.
- A. Guitton, Theoretical aspects of noise attenuation: **SEP-111**, 201-207.

### **SEP 108**

- A. Guitton, Coherent noise attenuation: A synthetic and field example: **SEP-108**, 225-248.
- A. Guitton, M. Brown, J. Rickett, and R. Clapp, A pattern-based technique for ground-roll and multiple attenuation: **SEP-108**, 249-274.
- A. Guitton, Solutions to data and operator aliasing with the parabolic radon transform: **SEP-108**, 283-296.
- J. Rickett, A. Guitton, and D. Gratwick, Adaptive multiple subtraction with non-stationary helical shaping filters: **SEP-108**, 275-282.

### **SEP 105**

- A. Guitton, Coherent noise attenuation using Inverse Problems and Prediction Error Filters: **SEP-105**, 27-48.
- J. Rickett and A. Guitton, Multi-dimensional Fourier transforms in the helical coordinate system: **SEP-105**, 167-176.

### **SEP 103**

- A. Guitton, Prestack multiple attenuation using the hyperbolic Radon transform: **SEP-103**, 181-201.
- A. Guitton, Huber solver versus IRLS algorithm for quasi L1 inversion: **SEP-103**, 255-271.
- A. Guitton, Implementation of a nonlinear solver for minimizing the Huber norm: **SEP-103**, 281-289.

### **SEP 100**

- A. Guitton and W. W. Symes, Robust and stable velocity analysis using the Huber function: **SEP-100**, 293-314.