

# DR ANDREAS WÜSTEFELD

Geophysicist  
– Seismology and Rock Physics –

<http://seis.bris.ac.uk/~glxaw/>

Born on September 23, 1976 in Northeim, Germany  
Nationality: German



## SUMMARY

During my PhD Thesis in Montpellier (France) I developed a Shear Wave Splitting environment in Matlab, which is freely available at <http://www.gm.univ-montp2.fr/splitting/>. The associated splitting database is popular amongst the researchers from all over the world.

In my current PostDoc position at Bristol University (UK) in collaboration Rio Tinto, I analyse fracture characteristics in a large minging dataset, using automated Shear-Wave Splitting. In applying this technique to micro-seismicity in reservoirs I can strongly benefit from the knowledge in stress and strain acquired during my Master Thesis. A previous project with Shell, involved implementing the Shear-Wave Splitting technique in the InSite seismic processing software. My focus lies on automation to increase objectivity and productivity for processing large datasets.

## POSITIONS

- 09/2007 – currently    PostDoctoral Research Assistant, *University of Bristol, UK*  
“Microseismicity and anisotropy in reservoirs and mines” - Implementing an automated shear wave splitting code in a professional reservoir production environment and benchmarking.
- 01/2005 – 09/2007    PhD in seismology, *Université Montpellier II, France*
- 01/2004 – 11/2004    Postgraduate Research Assistant, *University of Karlsruhe, Germany*  
- Matlab interface for heat conduction measurements  
- FE model of stress transfers caused by windmills
- 05/1998 – 12/2003    Student Research Assistant, *University of Karlsruhe, Germany*  
- Paleoseismology in Upper Rhinegraben (2003)  
- Visualization of 3D mantle flow in Matlab (2002 – 2003)  
- 3D-FD model of Rhinegraben and Israel in GoCaD (1998 – 2001)

## EDUCATION

- 01/2005 – 08/2007    PhD in Geophysics at Université Montpellier II, France  
PhD Thesis: “Methods and applications of Shear Wave Splitting”  
Supervisor: Prof. Götz Bokelmann
- 10/1997 – 11/2003    Diplom (Master’s Degree) in Geophysics at Universität Karlsruhe, Germany  
Master’s Thesis: “3D elastic Finite Element modelling of static stress changes due to strong intermediate depth earthquakes in the Vrancea region, Romania”  
Supervisors: Prof. Karl Fuchs, Prof. Friedemann Wenzel  
Graduate courses: Geophysics, Geodynamics and Tectonics, Rock Mechanics, Experimental Physics

## PUBLICATIONS

- Wüstefeld, A.; Bokelmann, G.H.R. & Barruol, G. (in Review) "Correlation of global seismic anisotropy from SKS splitting and surface waves", *PEPI*
- Wüstefeld, A.; Bokelmann, G.H.R. & Barruol, G. (2009) "Evidence for ancient lithospheric deformation in the East European Craton based on mantle, seismic anisotropy and crustal magnetism", *Tectonophysics*
- Bokelmann, G.H.R., Wüstefeld, A. (2009) "Comparing crustal and mantle fabric from the North American craton using magnetism and seismic anisotropy", *Earth Planet. Sci. Lett.*
- Wüstefeld, A.; Bokelmann, G.; Zaroli, C. & Barruol, G. (2008) „SplitLab: A shear-wave splitting environment in Matlab" *Computers & Geosciences*, 34, 515-528
- Wüstefeld, A. & Bokelmann, G. (2007) "Null Detection in Shear-Wave Splitting Measurements" *Bull. Seism. Soc. Am.*, 97, 1204-1211

I furthermore presented several posters and talks at international research conferences

## TEACHING EXPERIENCE

- |             |  |
|-------------|--|
| 2006 – 2009 | supervision of PhD, Master and undergraduate student projects            |
| 2003 – 2004 | Instruction of new diploma students in numerical modelling software      |
| 2001 – 2004 | Supervision of students' practical course "Material parameters of cores" |
| 2001 – 2002 | Supervision of students' field practical course "Magnetism"              |

## FIELD EXPERIENCE

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|-------------------|---|
| 07/2001 – 10/2001 | RV Polarstern cruise 17/2 - Deployment of ice-borne seismic stations, magnetic survey flights, gravimetry, parasound, airgun and streamer handling for reflection seismic surveys, data preprocessing, extraction of sediment cores on board Icebreaker <i>Polarstern</i> during AMORE2001 expedition to Arctic Gakkel-Ridge, Nansen-Basin and North Pole ( <i>Alfred Wegener Institut, Germany</i> ) |
| 04/2000 – 05/2000 | RV Meteor cruise 47/2 - Deployment of OBS/OBH stations, airgun handling and data pre-processing on board research vessel <i>METEOR</i> during GERSHWIN expedition, Mid-Atlantic-Ridge, 5°S ( <i>Geomar Kiel, Germany</i> )  |
| 07/1998 – 08/1999 | CDRoM: Continental Dynamics- Rocky Mountains Project - Deployment of seismic stations in the central Rocky Mountains, CO, USA ( <i>Univ. Karlsruhe</i> )  |
| 09/1998           | TransAlp - Deployment of seismic stations in Austrian and Italian Alps ( <i>Univ. Munich</i> )  |
| 07/1998           | Mining Geophysics - Mining geophysics in the teaching mine of the University of Freiberg, Germany   |
| 02/1998 – 04/1998 | SHIPS98: Seismic Hazards Investigations in Puget Sound - Deployment of seismic stations during SHIPS98 experiment in Seattle, WA, USA, region ( <i>USGS</i> )   |

## LANGUAGES

German:	Oral: Excellent	Written: Excellent (native language)
English:	Oral: Excellent	Written: Excellent
French:	Oral: Excellent	Written: Good

## ADDITIONAL INFORMATION

Software: Windows, Linux, Macintosh, Cygwin, MS-DOS, Amiga  
ABAQUS, Adobe, Corel, Didger, GMT, GoCaD, HyperMesh, InSite, Latex, Microsoft Office, MS Visual Studio, OpenDX, SAC, Surfer

Programming: Matlab, FORTRAN, C++, HTML, PHP, javascript, Basic, Assembler

Drivers license: up to 7.5t and full motorbike

SeismicCoffeeBreak: At Bristol University, I initiated and organised a bi-weekly group meeting to present and discuss current issues

## PERSONAL INTERESTS

Bass-Guitar, Mountain bike, Photography, Snowboard, Volleyball

## REFERENCES

Prof. Dr. Mike Kendall, Director of Research, Earth Sciences Department, Univ. of Bristol

<http://www.gly.bris.ac.uk/people/jmk.html>

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Prof. Dr. Götz Bokelmann, Head of Seismology, Univ. Montpellier II,

<http://www.dstu.univ-montp2.fr/PERSO/bokelmann/>

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Dr. Oliver Heidbach, Co-Head of World-Stress-Map project, GFZ Potsdam

<http://www.gfz-potsdam.de/>

Phone: +49 331 288 2814; Email: [Oliver.Heidbach@gfz-potsdam.de](mailto:Oliver.Heidbach@gfz-potsdam.de)