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Faculty Employment Application

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Job Number:	Job Title:	Date:
44727	**Assistant or Associate Professor**	**Mar 9 2010 8:53AM**

Personal Information

Last Name:	First Name:	Middle Name:	Email Address:		
Trouet	**Valerie**	**Marie-Jeanne**	**trouet@wsl.ch**		
Address:	City:	State:	Zip Code:	International Postal Code:	Country:
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Home Phone:	Cell / Other Phone:		Contact Number:		
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References

Name:	Institution/Organization	Address	Title:	Phone:	Email Address:
Alan Taylor	**The Pennsylvania State University**	**Department of Geography 302 Walker Building The Pennsylvania State University University Park, PA 16802**	**Prof.**	**814-8653433**	**aht1@psu.edu**
Jan Esper	**Johannes Gutenberg Universität Mainz**	**Institute of Geography Johannes Gutenberg-Universität Mainz Becherweg 21 D-55099 Mainz Germany**	**Prof.**	**+4961313922**	**esper@uni-mainz.de**
Paolo Cherubini	**Swiss Federal Research Institute WSL**	**Dendrosciences Unit Zürcherstrasse 111 8903 Birmensdorf Switzerland**	**Dr.**	**+41447392278**	**paolo.cherubini@wsl.ch**

Other Information

Are you legally authorized to work in the U.S.?
Yes

What is your current employment status with the University of Arizona?

Not a University of Arizona employee

If you are a current employee enter your Employee Identification Number (EID) in the space to the right. If you never worked for the University, worked as a student, or terminated your employment prior to July of 2001 enter N/A. Note: Please do not enter hyphens in the EID field. Your 9-digit EID number (Ex: 120001234) may be found by logging into the Employee Link website. Your EID number is located in the "Current Employment" tab. You may also find your EID number on your pay stub. Note: Your Employee ID number is NOT your Social Security Number.

N/A

Supplemental Questions

Where did you first learn about this position?

Invited by dept to apply

Enter the specific name of any referral source, or the code printed on the business card you received from The University of Arizona career fair booth:

Have you ever been convicted of or plea bargained to a misdemeanor offense?

No

If yes, you must provide criminal conviction information and dates: (*You are responsible for knowing if traffic violations or other citations received were classified as a misdemeanor*).

Have you ever been convicted of or plea bargained to a felony offense?

No

If yes, you must provide criminal conviction information and dates: (*You are responsible for knowing if traffic violations or other citations received were classified as a felony*).

By indicating 'Yes' below, I affirm that my responses above are true, complete and accurate. I understand that if I accept a job offer, I will be asked to give my written consent for the University of Arizona to conduct a check of my criminal conviction history, motor vehicle record, educational credentials and work history.

I further understand that a 'yes' response will not automatically disqualify me from consideration. However, falsifying, misrepresenting, or omitting criminal conviction information on any application document will likely result in a withdrawal of any job offer and termination of any subsequent employment with the University.

Yes, I affirm that my responses above are true, accurate and complete to the best of my knowledge.

Can you perform the essential functions (job duties) of this position with or without accommodation?

Yes

What is your current employment status with The University of Arizona?

Not a University of Arizona employee

If you have never worked for the University or terminated your employment prior to July 2001, please enter N/A in the space to the right. If you are a current, former, or retired UA employee and were issued an EmplID please enter your number in the space to the right. Your EmplID can be found by logging in to UAccess Employee and viewing your paycheck. Please do not enter hyphens in the EmplID field. Note: Your EmplID is not your Social Security Number.

N/A

Agreement

I certify the statements made by me in this application are true and complete to the best of my knowledge and belief and are made in good faith. I understand that any false statement made herein will void this application and any actions based upon it, and I agree to revise this application should any of the information change. I understand that this application and all attachments are the property of The University of Arizona. I authorize The University of Arizona or any of its agents to make reference checks relating to my employment and I also authorize all prior employers to provide full details concerning my past employment. I authorize the University of Arizona to request and obtain records to determine the accuracy of my responses. I understand that employment in certain positions may be conditional upon a background verification including but not limited to criminal records. I certify that I am or will be legally authorized to work in the United States at the time of hire.

BY SIGNING BELOW, I certify that I have read and agree with these statements.

Valerie Marie-Jeanne Trouet		
Applicant's Name	Applicant's Signature	Date

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Valérie Trouet
March 2010
Forests in the Earth System, University of Arizona

Statement of Research Interests

Tree-ring based reconstruction of atmospheric circulation patterns and their influence on terrestrial ecosystem dynamics

Summary

As a climate scientist and ecologist, I strive to conduct policy-relevant research about past environmental variations using dendrochronological methods. In light of ongoing and accelerated climatic change, we are facing a capital challenge that requires rapid and advanced progress in scientific research and understanding. Dendrochronology provides us with a powerful tool to achieve such progress. As a scientist, my goal is to apply my experience in tree-ring analysis to improve our understanding of natural climate variability. I am specifically interested in reconstructing atmospheric circulation patterns as internal drivers of climate variability and understanding their impact on terrestrial ecosystem dynamics.

Current research

The greatest challenge and potential for dendrochronology, in my opinion, to advance paleoclimatological research on a policy-relevant level include (1) decreasing uncertainty in large-scale temperature and regional hydroclimate reconstructions, (2) developing high-resolution climate reconstructions for the Southern Hemisphere and for tropical regions, and (3) reconstructing dynamical climate patterns. I have collaborated in various studies that have focused on the first aspect (Yuan *et al.* 2007, Buntgen *et al.* 2010, Frank *et al.* 2010), but my personal research experience has mainly focused on the latter two topics:

• *Tree-ring analysis in the miombo woodland of southern Africa:* I have studied the dendroclimatological potential of the miombo woodland, the main vegetation type in the summer-rain region of southern Africa, as part of both my Masters thesis (Trouet 1999) and my Ph.D. dissertation (Trouet 2004). During this project, I acquired extensive experience in organizing and managing scientific field campaigns in southern Africa. I investigated wood anatomical characteristics of various miombo species and developed tree-ring chronologies for various sites in Zambia, Tanzania, and Namibia. Intraannual growth analysis revealed that xylem formation was limited to the core of the rainy season (Trouet *et al.* in prep.) and climate/growth analyses showed the dominant influence of precipitation during this season.

Finally, we found that interannual variations in tree growth are linked to ENSO variability (Trouet *et al.* 2001, Fichtler *et al.* 2004, Trouet *et al.* 2006a, Trouet *et al.* 2010a).

• *Reconstruction of atmospheric circulation patterns:* Atmospheric circulation patterns, and their interaction with oceanic circulation systems, are a major driver of natural climate variability on interannual to millennial time-scales. In two recent studies, I demonstrated the relevance of the reconstruction of such patterns for the broader scientific community as well as for policy-makers. In a first study (Trouet *et al.* 2009a), we combined millennium-long, hydro-sensitive proxy records from two strategic locations in western Europe to reconstruct the North Atlantic Oscillation (NAO). A persistent positive NAO phase during medieval times was associated with shifts in the El Niño Southern Oscillation (ENSO) system and in the Atlantic Meridional Overturning Circulation, potentially driven by solar forcing. In this study, we have determined the NAO as the natural driving force behind medieval warming in Central Europe. In another study (Trouet & Taylor 2010), we have found climatic shifts and a 30-year cyclicity in the first tree-ring based reconstruction of the Pacific North American (PNA) pattern (1725-1995). The PNA pattern is a dominant mode of atmospheric circulation over North America that strongly influences fire danger and fire activity in northern California (Trouet *et al.* 2009b). The discovery of PNA cyclicity is therefore crucial in the development of regional fire prediction models.

In addition to these studies, I have organized a workshop on 'Synoptic-scale climate dynamics over the last millennium' (Trouet & Baker 2009). The main aim of this European Science Foundation (ESF) funded exploratory workshop was to explore the optimal symbiosis between paleoclimate data and coupled climate

models to improve understanding of climate dynamics over the last millennium. By analyzing proxy data and model simulations in tandem, forcing and feedback mechanisms in the climate system can be analyzed
and a dynamical reference frame for the assessment of current and future climatic change can be developed.
For this purpose, we brought together experts in paleoclimatology, paleoceanography, climate modelling, and climate processes to facilitate interdisciplinary discussion.
My research experience is not restricted to paleoclimatology *sensu stricto*, I am also interested in the influence of climatic variation on forest growth and forest disturbances. During a 2-year post-doctoral position at The Pennsylvania State University (PSU), I worked on a Joint Fire Science Program project that
investigated fire-climate interactions in the Mediterranean climate regions of California, Southern Oregon, and Western Nevada. In this project, we established a database of fire regime histories for more than 300 sites, which enabled us to investigate fire-climate teleconnection patterns along the U.S. Pacific Coast (Taylor *et al.* 2008). Research based on this database is still on-going and I recently received a grant from the Swiss National Science Foundation (SNSF) to visit PSU for 2 months in spring 2010 to wrap up this project. In a recent study, I have pushed the spatiotemporal boundaries of tree-ring based fire reconstruction
by compiling fire records from widely dispersed areas, resulting in annually-resolved fire records for four regions in the American West that extend back to 1400 CE (Trouet *et al.* 2010b). In addition to these historical fire studies, I have also looked at fire-climate interactions using instrumental data sets of fire risk (Trouet *et al.* 2009b) and fire activity (Trouet *et al.* 2006b).

Future research

I intend to build upon my research expertise to develop a scientific profile that is concentrated on **tree-ring based reconstruction of atmospheric circulation patterns and their influence on terrestrial ecosystem dynamics.** Within this framework, I envision three main research avenues:
(1) *Seasonality of the climatic signal in tree-ring records:* Many important atmospheric circulation patterns (e.g., NAO, ENSO, PNA) influence climatic variability most strongly during winter. Tree-ring records, however, primarily capture climatic conditions during the growing season in summer. Because of site-specific conditions (e.g., Graumlich *et al.* 2003) or species-specific tree characteristics (Pederson *et al.*
2004), however, winter climate can sometimes be recorded in tree-rings and atmospheric circulation patterns can be reconstructed based on these records (Trouet *et al.* 2009a, Trouet & Taylor 2010). To optimize the use of tree-rings for atmospheric circulation reconstruction, a better understanding is needed of the ecological conditions imprinting a winter climate signal in tree growth. To improve this understanding I suggest:
• Detailed analysis of tree growth at known sites with a winter climatic signal. Such experiments could include intra-annual cambial activity analysis and analysis of other tree-ring parameters (stable isotope, wood anatomical, and density measurements).
• Tree growth/climate analysis at new sites with similar ecological conditions as the known sites with a winter climatic signal (e.g., similar elevation, similar annual climate cycle).
(2) *Reconstruction of atmospheric circulation patterns:* In particular, I aim to expand the existing atmospheric circulation reconstructions in both space (tropical regions and Southern Hemisphere) and time
(past millennium). Furthermore, I am interested in using stable isotopes in tree-rings for this purpose and in applying multi-proxy approaches (cfr. Trouet et al. 2009a). Variations in δ18O in tree-rings (and other high-resolution proxies) can be linked not only to precipitation variability, but also to source regions and can thus shed light on synoptic-scale circulation patterns (e.g., Berkelhammer & Stott 2008). Finally, as has been profoundly discussed in the above-mentioned ESF workshop, an integration of high-resolution proxy records in climate modelling efforts is essential for understanding internal and external forcings of natural climate variability on a global scale. I have in the past collaborated with modellers from the NCAR Paleoclimate Research team in Boulder and from the Scripps Research Institute (Trouet *et al.* 2009a) and I
intend to continue these collaborations in the future, as integrating models and proxies is a mutual research
priority.

I suggest two concrete research plans for spatiotemporal extension of atmospheric circulation reconstructions:

• **MINERVA: Miombo tree-ring and Isotope Network for the Reconstruction of precipitation Variability in southern Africa** (submitted to the SNSF on March 1, 2010). Through MINERVA, we aim to improve our understanding of spatiotemporal precipitation variability and associated dynamical mechanisms in southern Africa by developing a network of tree-ring based climate reconstructions. These goals will be reached in three work packages: development of a miombo tree-ring width coast-to-coast transect; isotopic tree-ring analysis; and reconstruction of precipitation variability over the last 150 years and multi-decadal analysis of ocean-atmosphere drivers. The use of tree-ring isotopic composition to reconstruct synoptic-scale ocean-atmosphere interactions is still in its pioneering stage (e.g., Miller *et al.* 2006) and the location of the proposed MINERVA transect, bordered on both sides by the strong influence of two different oceans, provides a unique opportunity to study the mechanics of proxy-isotope-source region relationships.

• **A temporal extension of the PNA reconstruction** (Trouet & Taylor 2010). This first PNA reconstruction was based on tree-ring records from the International Tree Ring Database and was therefore restricted in time (1725-1995) by the length of the available records. By resampling the areas from which the contributing tree-ring records originate, longer records can be established and potentially extend the PNA reconstruction back in time. The 275-year long reconstruction shows periodicity that corresponds to documented global climatic shifts; extending the record over longer time scales (e.g., to Medieval times) can shed light on the drivers of these climatic shifts. Of particular interest would be the transition between the Medieval Climate Anomaly and the Little Ice Age (approximately 1300-1450 C.E.).

(3) *Interaction of atmospheric circulation patterns with forest ecosystem dynamics:* The Laboratory for Tree-Ring Research at the University of Arizona has a long tradition of tree-ring based fire ecology research in the southwestern U.S. (Swetnam & Betancourt 1990, 1998,Grissino-Mayer & Swetnam 2000) and I intend to contribute to this tradition. In a recent study (Trouet et al. 2010b), we have shown that historical fire-climate analysis can be based on a limited number of fire-scar samples if they originate from widely dispersed sites. By adapting sampling strategies to specifically target old trees from various sites, this approach can be used to extend the regional fire chronology for the Southwest back to medieval times
(prior to 1400 C.E.). Given the specific global climate configuration during this period, the role of ENSO therein, and the influence of ENSO on fire regimes in the Southwest (Swetnam & Betancourt 1990), detailed information about regional fire activity during this period will also be relevant on a global scale (Graham *et al.* 2007). Furthermore, decadal- to centennial-scale fire variability has been linked to historical greenhouse gas emissions (Ferretti *et al.* 2005, Marlon *et al.* 2008) and profound analysis of this link will be very relevant in understanding carbon-climate feedback mechanisms (e.g., Frank et al. 2010). By combining fire-scar records with independent, climate-sensitive tree-ring records and carbon flux models (e.g., CFLUX), the role of historical fire activity in the carbon cycle and its sensitivity to temperature, drought, and teleconnection variability can be quantified (Mouillot & Field 2005). Finally, atmospheric circulation patterns influence not only fire regimes but also other forest disturbances on interannual to decadal time-scales. Tree-ring research provides an opportunity to investigate the historical interaction between various forest disturbances and how they are influenced by climate. In the region of PNA influence (Alaska, British Columbia, Pacific Northwest, and northern California), for instance, forests are disturbed not only by wildfires, but also by regular insect outbreaks (McCloskey *et al.* 2009, van Mantgem *et al.* 2009). Existing regional fire scar and insect outbreak records can be expanded upon and used to analyse PNA impact on these forest disturbances and their interaction in a spatiotemporally explicit
manner.

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Statement of Teaching Interests

Climatic change is one of the major challenges that society is facing for the very near future. Our greatest hope for addressing this challenge is the yet untapped minds that will populate future generations and the solutions and future technologies that will sprout from them. As a climate scientist, I therefore see it as my duty and my privilege to optimize the potential of this human resource by training the next generation of scientists. My general approach to teaching is to enthusiastically communicate both my awe for the natural
world and our state-of-the-art knowledge of the science behind it.

I am fascinated by the natural world and especially by its spatiotemporal complexity and intrinsic order. Communicating my excitement about earth and natural sciences to students is simply a natural extension of
my own passion. In many lectures, I have presented our millennium-long North Atlantic Oscillation (NAO) reconstruction (Trouet et al. 2009a). The strong visual relation between a stalagmite record from Scotland and a tree-ring record Morocco that lies at the base of this reconstruction, has never failed to impress students and fellow scientists. As a teacher, I aim to not only describe individual elements of the earth system, but more importantly to encourage a deeper understanding of the complex interactions between these elements. Because individual elements such as trees and weather conditions populate our everyday lives, it is easy to provoke a basic interest and understanding. The challenge, however, is to raise this interest to the level where the complexity of the earth system is understood. Again, our NAO reconstruction provides a suitable example: both tree growth and stalagmite growth are tangible elements which support the understanding of much more complex concepts such as the NAO and its role in global climate dynamics.

An advanced understanding of the earth system is fostered by grounding the natural sciences in a solid mathematical, physical, and statistical background. I enjoy teaching quantitative and theoretical courses and to see the capacity of problem-solving evolving in students. When teaching theory-based courses (e.g.,
time series analysis or geostatistics), I like to follow the path of abstraction, because too many examples often obscure the structure and logical flow of the course. Abstraction helps to understand the concept rather than just its applications, to see the forest rather than just the trees. Carefully chosen examples, however, can function as an effective feedback mechanism to applications. I remember, for instance, not being overly impressed as a student by the Fibonacci sequence (a mathematical series in which each subsequent number is equal to the sum of the previous two numbers of the sequence itself) until I learned that the arrangement of petals in many flowers and of pine cones follows this sequence.

Structure and logical sequence are very important concepts in teaching complex subjects. I start every class
by placing the current subject in the context of the complete course and end the class by discussing it in the
realm of previously discussed topics. This spring semester, I will teach a series of graduate seminars at The Pennsylvania State University about fire ecosystems in the Anthropocene. A broad spectrum of individual topics will be covered (fire meteorology, fire climatology, greenhouse gas emissions, feedback effects, etc.), but the common concept will aid to place these topics in a policy-relevant context. Essential to a well-structured class are emphasis and repetition of fundamental aspects. I ask and answer a lot of questions to make sure that keystone concepts are well understood and, if necessary, skip less essential parts to ensure that all students walk away with a solid fundamental understanding of the subject matter.

Humour is often a highly efficient agent for imprinting keystone concepts, as well important details, in students' memories. While giving a lecture on climate dynamics in a graduate seminar series at Ghent University (Belgium), I compared the variability in the ENSO climatic system to hot flashes, which is admittedly rather far-fetched and probably not entirely politically correct. However, a former student reminded me of that comparison years later and told me that she still used this as a 'short-cut' to understanding the ENSO system.

Field excursions are a crucial addition to classroom teaching in earth sciences. The location of the

University of Arizona in the Southwest, with its abundance of natural resources and ecosystems, allows for
exciting and highly relevant field trips in the immediate surroundings. I would for instance like to organize an excursion that focuses on forest disturbances and their interactions along an elevational gradient. An interesting area for this topic, albeit not in the immediate vicinity of AZ, is the area around Lake Tahoe (CA). Historical fire regimes can be very well explained in the Dog Valley (Toiyabe NF), and examples of the current challenges of fire ecology (biomass build-up and urban-fire interfaces) are widely available. This field trip could be combined with visits to other worldwide renowned research institutes (e.g., Desert Research Institute, Reno, NV) to invoke interest in scientific research.
Furthermore, students should have ample opportunity to become personally involved in scientific research.
Providing research experiences that foster a deep understanding of scientific method and ethos is an essential element of educating scientists. Another way to inspire students is to actively involve them as undergraduate or graduate assistants in research projects. The field of paleoclimatology, and tree ring analysis in particular, allows for ample research opportunities for all levels of students. Students can gain hands-on experience by participating in field work and by preparing, measuring, and cross-dating tree ring
cores. This direct contact with the samples helps in the interpretation of results and statistical analyses during later steps of dendroclimatological and -ecological projects. Tree ring-based projects can also encompass a large range of spatial, temporal, and organizational scales and can thus be tailored to the needs
and conditions of undergraduate, Masters, or Ph.D. projects. Finally, my own fascination with tree ring analysis, the fascination that I strive to pass on to my students, derives from its potential to provide complex spatiotemporal information about the earth system from sample material everyone can relate to: wood.

Dr. Valérie Trouet

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PERSONALIA

Day of birth July 24 1974
Place of birth
Place of residence
Leuven, Belgium
Zürich, Switzerland
Nationality belgian

EDUCATION

December 2004 **Ph.D. in Applied Biological Sciences (**KULeuven, Belgium)
June 1999
Master in engineering in land management and forestry, option soil and water management **(**Ghent University, Belgium**)**
October 1997 – February 1998 **Erasmus program** at the Faculty of Agriculture, Rheinische Friedrich Wilhelms Universität, Bonn, Germany
July 1992 High school diploma (Latin, Mathematics), Heverlee, Belgium

APPOINTMENTS

January 2007 – present **Research Scientist** in the Tree Physiology group of the Dendro Sciences Research Unit of the Swiss Federal Research Institute for Forest, Snow, and Landscape WSL (ETH domain). I work on various dendroclimatological, dendro-ecological, as well as tree physiological projects within our research group. I am particularly interested in the reconstruction of atmospheric circulation patterns and their impact on terrestrial ecosystems.

January 2005 – December 2006 **Post-Doctoral Research Associate at the Vegetation Dynamics Laboratory**, Department of Geography, The Pennsylvania State University. The framework for this position was a Joint Fire Science Program project entitled 'Fire-Climate Interactions and Predicting Fire Season Severity in the Mediterranean Climate Areas of California, Southern Oregon, and Western Nevada '.

January 2000 – December 2003 **Grant from the Institute for the Promotion of Innovation by Science and Technology in Flanders** for a Ph.D.-study entitled 'The ENSOeffect in southern Africa: dendrochronology and phenology of the miombo woodland'. This project was a collaboration between the Laboratory for Geomatics and Forest Engineering (Departement of Land Management, Katholieke Universiteit Leuven) and the Laboratory for Wood Biology and Xylarium (Departement for agricultural and forest economics, Royal Museum for Central Africa, Tervuren).

September 1996, September 1997 **Internships** at the Laboratory for Plant Ecology and the Laboratory for Molecular Biology (Université Catholique de Louvain-la-neuve, Belgium).

TEACHING

March-April 2010 **Visiting Faculty** in the Geography Department, The Pennsylvania State University (Global Ecology and Biogeography; Fire Ecosystems and People)
December 2009 **Guest lecturer** in dendroclimatology (Universiteit Gent)
September 2009 **Lecturer** at the NFZ-Forestnet Summer School (ETH, Zürich)
September 2007, 2008 **Instructor** at the International dendrochronological fieldweek (Lötschental, Switzerland)
January 1st 2000 – December 31st 2003
Supervisor of 4 Masters students at the Department of Land Management, Katholieke Universiteit Leuven.
Teaching activities in the field of forestry (practical courses, Katholieke Universiteit Leuven) and numerical vegetation ecology (theoretical course, Ghent University).

AWARDS, GRANTS, AND HONORS

March 2010 (submitted) **Schweizerische Nationalfonds (SNF) project proposal** MINERVA : Miombo tree-ring and Isotope NEtwork to Reconstruct precipitation Variability over southern Africa (408000 CHF)
January 2010 **Schweizerische Nationalfonds (SNF) international short visit funding** (6190 CHF) for a 6-week stay at the Pennsylvania State University.
October 2009 **ESF MedCLIVAR young scientist exchange grant** (3350 EUR) for a 2-month internship at WSL for Albena Ivanova (Forestry University of Sofia, Bulgaria)
November 2008 **ESF Exploratory Workshop Grant (**14000 EUR) for the organization of a workshop on synoptic-scale circulation patterns over the last millennium; 17-20 May 2009, Kippel, Switzerland
November 2008 **Oeschger Centre for Climate Research** (University of Bern, CH) funding (5000 CHF) for above-mentioned workshop
1999-2003 **Research Grant**, Institute for the Promotion of Innovation by Science and Technology in Flanders (80000 EUR)
September 2008 **Young Scientist Travel Award**, European Meteorological Society
April 2003 **Conference Travel Grant**, Fund for Scientific Research – Flanders
December 1999 Laureate of the **Development Cooperation Prize** (Belgian Development Cooperation) for Masters thesis

LANGUAGES

Dutch Mother tongue

	Understand	*Speak*	*Write*
English	Excellent	Excellent	Excellent
German	Excellent	Excellent	Very good
French	Excellent	Very good	Very good
Spanish	Good	Moderate	Moderate

PROFESSIONAL MEMBERSHIPS

Association for Tree ring Research (ATR)
European Geosciences Union (EGU)

PUBLICATIONS

Articles in peer review journals (JCR indexed).....16
Other peer-reviewed articles.....7
Thesis.....1

Journal title	**Impact factor (JCR 2008)**	**Year of publication**	**Main discipline**
Biotropica	2.17	2006	Ecology
Climate Dynamics	4.046	2010	Meteorological & atmospheric science
Dendrochronologia	0	2010	Forestry
Geophysical Research Letters	2.959	2006 2010	Geosciences
IAWA Journal	1	2001	Forestry
International Journal of Wildland Fire	1.432	2008	Forestry
Nature	31.434	2010	Multidisciplinary
Quaternary Science Reviews	3.693	2010	Geosciences
Science	28.103	2009	Multidisciplinary
Theoretical and Applied Climatology	1.621	2009	Meteorological & atmospheric science
Tree-Ring Research	0.3	2007	Forestry
Trees – Structure and Function	1.629	2004 2009 2010 (2)	Forestry

JOURNAL ARTICLES (indexed in the Journal Citation Reports, Science Citation Index)

Trouet V, Mukelabai M, Boeren I, Couralet C, Beeckman H (in preparation) Growth periodicity in *Brachystegia spiciformis* (Leguminosae) trees from South Central Africa. *Biotropica*

Trouet V, Ivanova A, Frank D, Panayotov M (in preparation) A summer temperature reconstruction (1765-2008) for the Pirin Mountains in Bulgaria. *The Holocene*

Baker A, Wilson R, Fairchild I, Franke J, Spoetl C, Trouet V (in review) High resolution d18O and d13C records of the last millennium climate from an annually laminated Scottish stalagmite. ***Global and Planetary Change***

Trouet V, Esper J, Beeckman H (2010) Climate/growth relationships of *Brachystegia spiciformis* from the Miombo woodland in southern Africa. ***Dendrochronologia*** DOI: 10.1016/j.dendro.2009.10.002

Trouet V, Taylor AH (2010) Multi-century variability in the Pacific North American (PNA) circulation pattern reconstructed from tree rings. ***Climate Dynamics*** DOI:10.1007/s00382-009-0605-9

Trouet V, Taylor AH, Wahl ER, Skinner CN, Stephens SL (2010) Fire-climate interactions in the American West since 1400 CE. ***Geophysical Research Letters*** DOI:10.1029/2009GL041695

Büntgen U, Frank D, Trouet V, Esper J (2010) Diverse growth trends and climate responses of highelevation Mediterranean tree-ring width and density. ***Trees – Structure and Function*** DOI:10.1007/s00468-009-0396-y

Büntgen U, Trouet V, Leuschner HH, Frank D, Friedrichs D, Esper J (2010) A tree ring-based summer

drought reconstruction for Central Germany reveals evidence of the Medieval Climate Anomaly. ***Quaternary***
Science Reviews DOI: 10.1016/j.quascirev.2010.01.003
Frank D, Esper J, Raible C, Büntgen U, Trouet V, Joos F (2010) Ensemble temperature reconstruction constraints on CO_2 feedbacks. ***Nature*** 463, 527-530, DOI: 10.1038/nature08769
Panayotov M, Bebi P, Trouet V, Yurukov S (2010) Climate signal in tree-ring chronologies of *Pinus peuce*
and *Pinus heldreichii* from the Pirin Mountains in Bulgaria. ***Trees – Structure and Function***
DOI:10.1007/s00468-010-0416-y
Trouet V, Esper J, Graham NE, Baker A, Frank DC, Scourse JD (2009). Persistent positive North Atlantic Oscillation mode dominated the Medieval Climate Anomaly. ***Science*** 324, 78 – 80,
DOI: 10.1126/science.1166349
Trouet V, Taylor AH, Carleton AM (2009) Interannual variations in fire weather, fire extent, and synopticscale
circulation patterns in northern California and Oregon. ***Theoretical and Applied Climatology*** 95:349-360, DOI: 10.1007/s00704-008-0012-x.
Friedrichs D, Trouet V, Büntgen U, Frank DC, Esper J, Neuwirth B, Löffler J (2009) Twentieth century
climate sensitivity of Central European tree species. ***Trees - Structure and Function*** 23:729-739, DOI

10.1007/s00468-009-0315-2
Taylor AH, Trouet V, Skinner CN (2008). Climatic influences on fire regimes in montane forests in the southern Cascades, California, USA. ***International Journal of Wildland Fire*** 17:60-71.
Yuan Y, Shao X, Wei W, Yu S, Gong Y, Trouet V (2007) The potential to reconstruct Manasi River streamflow in the northern Tien Shan mountains (NW China). ***Tree Ring Research*** 63, 81-93.
Trouet V, Taylor AH, Carleton AM, Skinner CN (2006) Fire-climate interactions in forests of the American Pacific Coast. ***Geophysical Research Letters***, 33:L18704, doi:10.1029/2006GL027502.
Trouet V, Coppin P, Beeckman H (2006) Annual ring patterns in Brachystegia Trees of the Miombo Woodland reveal climatic Influence. ***Biotropica*** 38(3): 375-382.
Fichtler E, Trouet V, Beeckman H, Coppin P, Worbes M (2004) Climatic signals in tree rings of Burkea
africana and Pterocarpus angolensis from semi-arid forests in Namibia. ***Trees – Structure and Function*** 18:
422-451.
Trouet V, Haneca K, Coppin P, Beeckman H (2001) Tree ring analysis of Brachystegia spiciformis and Isoberlinia tomentosa: evaluation of the ENSO-signal in the miombo-woodland of eastern Africa. ***IAWA Journal*** 22: 385-399.

OTHER PEER REVIEWED PUBLICATIONS

Skinner CN, Abbott CS, Fry DL, Stephens SL, Taylor AH, Trouet V (2009) Variation in Fire Regime Characteristics in California's North Coast Range. ***Fire Ecology*** 5: 73-96, doi: 10.4996/fireecology.0503073
Trouet V, Baker A (2009) Reconstructing climate dynamics over the last millennium. ***EOS*** 90 (33):283-284.
Trouet V, Esper J, Baker A, Frank D, Graham N (2008) A multi-proxy reconstruction of winter NAO variability since AD 1050. In: Young G, McCarroll D (Eds.) European climate of the past millennium, Proceedings Volume, Calla Millor, Spain, 13-15 March 2008, 116-117.
Trouet V, Esper J (2008). Contrasting long-term drought signals in proxy records from northwestern Europe and the Mediterranean. In: Elferts D et al. (Eds.) *Tree rings in archaeology, climatology and ecology*,
TRACE, Vol. 6, 51-56.

Frank D, Bouriaud O, Battipaglia G, Büntgen U, Fonti P, Treydte K, Trouet V, Esper J (2008) A challenge for spatially explicit reconstructions: the climate response of trees is a function of climate. In: Elferts D et al. (Eds.) *Tree rings in archaeology, climatology and ecology, TRACE*, Vol. 6, 31-36.
Trouet V, Taylor AH (2007) Fire-climate interactions in northern California. *Tree rings in archaeology, climatology and ecology, TRACE*, Vol. 5. 127-135.
Trouet V, Taylor AH, Beaty M (2006) Fire-climate interactions in the northern Sierra Nevada mountains,
Lake Tahoe Basin, USA. *Proceedings of the 3rd International Fire Ecology and Management Congress* (San Diego, 13-17 November 2006).
Trouet V, Bauwens I, Beeckman H, Coppin P (2002) Modelling Net Primary Production of the miombo
woodlands in Zambia. *Proceedings of the 29th International Symposium on remote sensing of environment* (Buenos Aires, Argentina, April 8-12, 2002).
THESIS
Trouet V (2004) The El Niño Southern Oscillation effect on Zambezian miombo vegetation: proxies from
tree ring series and sattelite-derived data. *Dissertationes de Agricultura*, 638, Katholieke Universteit Leuven,
252 p.
REVIEWER FOR
Journals: Biotropica, Canadian Journal of Forest Research, Climate of the Past, Climate Research, Climatic
Change, Dendrochronologia, Ecology, Fire Ecology, Forest Ecology and Management, Geophysical Research
Letters, The Holocene, International Journal of Climatology, International Journal of Wildland Fire, Journal
of Climate, Journal of Geophysical Research, Journal of Hydrology, Journal of Tropical Ecology, Quaternary
Science Reviews, Science, Tree Ring Research, Trees – Structure and Function
Funding Agencies:
ESF – European Science Foundation
FCT – Fundação para a Ciência e a Tecnologia (Portugal)
FONDECYT – National Fund for Scientific and Technological Development (Chile)

NOAA – Climate Change Data and Detection (CCDD) Program
NSERC – Natural Sciences and Engineering Research Council of Canada
NSF – National Science Foundation (USA)
NWO - Netherlands Organisation for Scientific Research
CONFERENCES AND WORKSHOPS
ESF exploratory workshop on synoptic-scale climate dynamics over the last millennium (17-20 May 2009; Kippel, CH). Convenor
7th Symposium on Fire and Forest Meteorology (23-25 October 2007; Bar Harbor, ME). Member of the programming committee.
AAG 2006 Conference Session. Organizers: Valerie Trouet and Matthew Therrell (Southern Illinois University) Title: Dendrochronology VI: Tropical Dendrochronology I; Dendrochronology VII: Tropical Dendrochronology II at the 102nd annual meeting in Chicago, IL.
INVITED LECTURES (selected)
Geographisches Institut, Johannes Gutenberg Universität, Mainz, Germany (24 June 2010) *Long-term*
dynamics of the North Atlantic Oscillation

Institutes of energy and the environment, The Pennsylvania State University (2 April 2010) *Tree-ring*
based reconstruction of atmospheric circulation patterns
INRA, Nancy, France (4 March 2010) *Tree ring-based reconstruction of forest fire regimes, atmospheric*
circulation patterns, and their interactions
IMEP, Aix-en-Provence, France (2 December 2009) *Reconstructing atmospheric circulation patterns using*
tree ring analysis
Eurodendro, Mallorca, Spain (28 October 2009) Keynote Lecture: *Developments, advances, and challenges in dendroclimatology*
3rd Milestone Meeting of the Millennium Project, Mallorca, Spain (3 March 2009) Keynote Lecture: *Persistent positive NAO mode dominated the Medieval Climate Anomaly*
Centre d'Ecologie Fonctionelle et Evolutive, CNRS, Montpellier, France (25 February 2009) *Tree ring*
based reconstruction of atmospheric circulation patterns and their influence on natural fire regimes in the
Western U.S.
CEREGE, CNRS, Aix-en-Provence, France (24 February 2009) *Tree ring based reconstruction of atmospheric circulation patterns and their influence on natural fire regimes in the Western U.S.*
IGDP in Ecology, The Pennsylvania State University (11 September 2006) *Tree ring analysis of Zambezian miombo vegetation*
OUTREACH (selected)
De Morgen (8 October 2009) *The Age of (pretending to be) stupid* (opinion piece in prominent Belgian newspaper)
New Scientist (2 April 2009) *Natural mechanism for medieval warming discovered* (Nora Schultz)
New Scientist (2703; 11 April 2009) *Medieval warming study is blow to climate change deniers*
Pour La Science (14 April 2009) *Le climat du Moyen Âge : entre cèdres marocains et grottes écossaises* (Loïc Mangin)
Radio Suisse Romande (22 april 2009) Impatience : *Histoire du climat* (interview by Pascaline Minet)