

CURRICULUM VITAE

Personal Details

Name: **Gaël Le Roux**
Date and place of birth: February 3rd, 1978, Paris, France
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Current position

Postdoctoral position at the Institute of Radioprotection and Nuclear Safety (IRSN) in the Laboratory for Continental and Marine Radioecological Studies (LERCM, Cadarache)

Educational Background

Oct.2001-May 2005 PhD in environmental geochemistry,
University of Heidelberg, Germany
Dissertation title: "Fate of natural and anthropogenic particles in peat bogs"
Overall grade: Summa Cum Laude ("excellent")
Examiners:
- Prof. William Shotyk, PhD supervisor (Institute of environmental geochemistry, Heidelberg)
- Dr. Alain Véron (CEREGE, Aix en Provence)
- Prof. Augusto Mangini (Institute of environmental physics, Heidelberg)
- Prof. Heinfried Schöler (Institute of environmental geochemistry, Heidelberg)

2000-2001 Diplôme d'Études Approfondies en Géosciences de l'Environnement CEREGE (University of Aix-Marseille I, France) (equivalent to a Master degree, 5th year of French university)

1998-2000 Magistère Sciences de la Terre (equivalent to a Bachelor's degree with honours in Earth Sciences)
E.N.S. Lyon (University of Lyon 1, France)

1996-1998 D.E.U.G de Sciences de la Matière (equivalent to the first years in a degree in Physic and Chemistry (University of Rennes 1, France)

Research experiences

Aug. 2005-2006 *Geochemistry of natural radionuclides (isotopes of the U-Th decay chains and cosmogenic radionuclides)*
1. Use of ²¹⁰Pb, ⁷Be as tracers of aerosol deposition,
2. Evaluation of levels of natural radioactivity in France including dosimetry

*Oct.2001-2006**Biogeochemistry*

1. Geochemical cycles of natural and anthropogenic elements in the terrestrial environment,
2. Use of stable and radioactive isotopes as environmental tracers,
3. Development of new sampling and analytical techniques to improve analysis of environmental samples,
4. Use of peat bogs as environmental archives (pollutants and palaeoclimate).

February-June 2001

"Study of ancient lead contaminations in the harbours of Marseilles, Sidon and in the roman city of Arles"; under the direction of Alain Véron (CEREGE, Aix en Provence)

May-August 2000

"Sediment Geometry Influence on foreland basins and sediment load influence on rift formations: analogical modelling"; under the direction of Thierry Nalpas (University of Rennes, France)

June-July 1999

:"Construction of a structural map of Myanmar based on satellite imagery"; under the direction of Claude Rangin (E.N.S Ulm, Paris)

Technical experiences

Sampling techniques

Fieldworks in England, Germany, Switzerland, France (rocks, soil, sediment, water and snow samples)

2002-2005

In charge of the Lab. of samples preparation (Heidelberg)

Analytical techniques

Work in ultra-clean room

Pb, Sr, Cu and Zn isotopes (TIMS, MC-ICP-MS)

Trace elements including Rare Earths (ICP-OES, ICP-MS)

2003-2005

In charge of the Low Background Gamma spectrometry Lab. (Heidelberg)

Age dating methods (^{14}C , ^{210}Pb)

Basic skills in Scanning Electron Microscopy and X-ray diffraction analysis

Journals refereed for

Geochimica et Cosmochimica Acta

Environmental Chemistry

Atmospheric Environment

Languages*French*

Mother Tongue

English

Fluent

German

Fluent

Spanish

Beginner

Other skills

2D and 3D mapping with Arcgis, 3DEM, Google Earth

Design with Adobe Illustrator, Photoshop, Gimp, InkScape

Organizer of scientific activities for children and teenagers

Driving license

Publications

Type of publications		
<i>Scientific journals</i>	1st author	3
<i>With impact factor > 1</i>	Co-author	7
<i>Others</i>		6
<i>Book chapters</i>		3
<i>International conferences</i>	1st author	6
	Co-author	4

Scientific articles in journals with impact factor > 1:

Geosciences

[A1] **G. Le Roux**, E. Laverret and W. Shotyk: Fate of minerals in ombrotrophic peat bog, *Journal of the Geological Society of London*, **2006**, 163, 641-646

[A2] **G. Le Roux**, D. Aubert, P. Stille, M. Krachler, B. Kober, A. Cheburkin, G. Bonani, W. Shotyk: Recent atmospheric Pb deposition at a rural site in southern Germany assessed using a peat core and snowpack, and comparison with other archives, *Atmospheric Environment*, **2005**, 39 (36), 6790-6801

[A3] **G. Le Roux**, D. Weiss, J. Grattan, N. Givelet, M. Krachler, A. Cheburkin, N. Rausch, B. Kober, W. Shotyk: Identifying the sources and timing of ancient and medieval atmospheric lead pollution in England using a peat profile from Lindow bog, Manchester, *Journal of Environmental Monitoring*, **2004**, 6 (5), 502-510

[A4] D. Aubert, **G. Le Roux**, M. Krachler, A. Cheburkin, B. Kober, W. Shotyk and P. Stille: Fate of atmospheric REE entering an ombrotrophic peat bog in Black Forest (SW Germany): evidence from snow, lichens and mosses, *Geochimica Cosmochimica Acta*, **2006**, 70, 2815-2826

[A5] N. Rausch, T. Nieminen, L. Ukonmaanaho, **G. Le Roux**, M. Krachler, A.K. Cheburkin, G. Bonani and W. Shotyk : Comparison of Atmospheric Deposition of Copper, Nickel, Cobalt, Zinc, and Cadmium Recorded by Finnish Peat Cores with Monitoring Data and Emission Records, *Environmental Science and Technology*, **2005**, 39(16), 5989-5998

[A6] W. Shotyk, M. Goodsite, F. Roos-Barraclough, N. Givelet, **G. Le Roux**, D. Weiss, A.K. Cheburkin, K. Knudsen, J. Heinemeier, W.O. van Der Knaap, S.A. Norton, C. Lohse, Accumulation rates and predominant atmospheric sources of natural and anthropogenic Hg and Pb on the Faroe Islands , *Geochimica and Cosmochimica Acta*, **2005**, 69 (1), 1-17

[A7] N. Givelet, **G. Le Roux**, A. Cheburkin, B. Chen, J. Frank, M. Goodsite, H. Kempter, M. Krachler, T. Noernberg, N. Rausch, S. Rheinberger, F. Roos-Barraclough, A. Sapkota, C. Scholz, W. Shotyk : Suggested protocol for collecting, handling and preparing peat cores and peat samples for physical, chemical, mineralogical and isotopic analyses, *Journal of Environmental Monitoring*, **2004**, 6 (5), 481-492

Methods, analytical chemistry

- [A8] N. Rausch, L. Ukonmaanaho, T. Nieminen, M. Krachler, **G. Le Roux**, W. Shotyk: Evaluation of samplers and filter materials for the establishment of trace metal concentration profiles in porewaters using ICP-MS, *Analytica Chimica Acta*, **2006**, 558 (1-2), pp. 201-210
- [A9] D.J. Weiss, B. Kober, A. Dolgoplova, K. Gallagher, B. Spiro, **G. Le Roux**, T. Mason, M. Kylander, B.J. Coles: Accurate and precise Pb isotope ratio measurements in environmental samples by MC-ICP-MS, *International Journal of Mass Spectrometry*, **2004**, 232, 205-215
- [A10] M. Krachler, **G. Le Roux**, B. Kober and W. Shotyk: Optimising accuracy and precision of lead isotope measurement (^{206}Pb , ^{207}Pb , ^{208}Pb) in acid digests of peat with ICP-SMS using individual mass discrimination correction, *Journal of Atomic Analytical Spectrometry*, **2004**, 19 (3), 354-361

B. Articles in other scientific journals:**Geosciences**

- [B1] **G. Le Roux**, D. Weiss, A. Cheburkin, N. Rausch, J. Grattan, M. Krachler and W. Shotyk: Heavy metals, especially lead, deposition recorded in an ombrotrophic peat bog near Manchester, United Kingdom, *Journal de Physique IV*, **2003**, 107, 739

Archaeometry

- [B2] **G. Le Roux**, A. Véron and C. Morhange : Lead pollution in the ancient harbour of Marseilles, *Méditerranée*, **2005**, 104 (1/2), 31-36
- [B3] **G. Le Roux**, A. Véron, C. Scholz and C. Doumet-Serhal: Chemical and isotopical analyses on weapons from the middle Bronze Age in Sidon, *Archaeology and History in Lebanon*, **2004**, 18, 58-61.
- [B4] **G. Le Roux**, A. Véron, C. Morhange: Geochemical evidences of early anthropogenic activity in harbour sediments from Sidon, *Archaeology and History of Lebanon*, **2004**, 18, 115-119
- [B5] **G. Le Roux**, A. Véron and C. Morhange: Caractérisation géochimique de l'anthropisation dans le port antique de Sidon. *Archaeology and History in Lebanon*, **2003**, 15, 37-41.
- [B6] A. Véron and **G. Le Roux**: Provenance of Silver artefacts from Burial 27 at Sidon. *Archaeology and History in Lebanon*, **2004**, 20, 34-38.

C. Book chapters:

[C1] **G. Le Roux** and William Shotyk (2006): Alteration of minerals in peat bogs; in *Peatlands: basin evolution and depository of records on global environmental climatic changes*, (editors: P. Martini, A. Martinez-Cortizas) in press, Elsevier.

[C2] W. Shotyk and **G. Le Roux** (2005): Biogeochemistry and Cycling of Lead. , pp. 239-268 in *Biogeochemical Cycles of the elements*, Vol. 43, 301 p. (editors: A. Sigel, H. Sigel, and R. K. O. Sigel), M. Dekker.

[C3] W. Shotyk, M.E. Goodsite, F. Roos-Barraclough, N. Givelet, **G. Le Roux**, D. Weiss, S. Norton, and K. Knudsen (2003) Atmospheric Mercury and Lead Accumulation Since 5420 ¹⁴C yr BP at Myrarnar, Faroe Islands. In Hoydal K. and Dam M. (eds.): *AMAP Greenland and the Faroe Islands 1997-2001*, Vol. 3: The Environment of the Faroe Islands, pp 9-19, Danish Environmental Protection Agency.

D. international conferences with proceedings:

As 1st author :

[D1] **G. Le Roux**, D. Aubert, M. Krachler, N. Givelet, A. Cheburkin, B. Kober, P. Stille, W. Shotyk ; *talk*: Multi-element and isotopic characterisation of atmospheric lead pollution in a rural site in Southern Germany (*Joint Earth Sciences Meeting, Strasbourg, 2004*)

[D2] **G. Le Roux**, N. Givelet, D. Aubert, A. Cheburkin, M. Krachler, B. Kober, P. Stille, W. Shotyk; *talk*: Ombrotrophic peat bogs. Sensitive and continuous archives of past deposition (*Joint Earth Sciences Meeting, Strasbourg, 2004*)

[D3] **G. Le Roux**, N. Givelet, D. Aubert, A. Cheburkin, M. Krachler, B. Kober, P. Stille, W. Shotyk; *talk*: Ombrotrophic peat bogs. Sensitive and continuous archives of past deposition (*The Quaternary Research Association Third International Postgraduate Symposium, Bruxelles, 2004*)

[D4] **G. Le Roux**, A. Cheburkin, B. Kober, W. Shotyk, M. Krachler, H.J. Küster; *poster* : Weathering of minerals as a source of metals in peat bogs (*International Symposium on Environmental Geochemistry conference, Edinburgh, 2003*)

[D5] **G. Le Roux**, A Véron, C. Morhange, K. Espic; *talk* : Lead isotopic characterisation of anthropisation in a mediterranean ancient harbour (*International Symposium on Environmental Geochemistry conference, Edinburgh, 2003*)

[D6] **G. Le Roux**, D. Weiss, A. Cheburkin, N. Rausch, J. Grattan, M. Krachler and W. Shotyk ; *talk* : Heavy metals, especially lead, deposition recorded in an ombrotrophic peat bog near Manchester, United Kingdom (*XII international conference on "Heavy Metals in the Environment", Grenoble, 2003*)

As co-author:

[D7] F. De Vleeschouwer, L. Gérard, M. Streel, **G. Le Roux** and N. Fagel, *talk* : Holocene record of atmospheric flux geochemical in a Belgian Hautes Fagnes peat bog (***Preliminary geochemical results. BELQUA, Tervuren, mai 2004***)

[D8] F. De Vleeschouwer, L. Gerard, N. Matielli, **G. Le Roux**, S. Leclercq, N. Fagel and H. Kempter, *talk*: Recent and past atmospheric lead and heavy metals inputs in North West Europe: Sources and Origin (***The Quaternary Research Association Third International Postgraduate Symposium, Bruxelles, 2004***)

[D9] L. Gérard, F. De Vleeschouwer, N. Mattielli, M. Streel, **G. Le Roux** and N. Fagel ; *poster* : Holocene record of atmospheric flux by geochemical and Pb isotopes signatures in a Belgian Hautes Fagnes peat bog: Preliminary results (***Goldschmidt conference, Copenhagen, 2004***)

[D10] D. J. Weiss, B. Kober, T.F. Mason, A. Dolgoplova, B.J. Coles, K. Gallagher, **G. Le Roux**, B. Spiro, R. Seltmann; *talk*: Lead as transient geochemical tracers in the environment: Assessing high precision isotope ratio measurements in lichens, peat, and silicates using multi-collector ICP-MS (***EGS-AGU-EUG Joint Assembly, Nice , 2003***)

[D11] M. Krachler, N. Rausch, J. Frank, **G. Le Roux**, W. Shotyk; *talk*: Sektorfeld ICP MS für die Bestimmung von Spurenelementen und Isotopenverhältnissen in Torfkernen und Porenwässern (***6. Symposium Massenspektrometrische Verfahren der Elementspurenanalyse/18. ICP-MS Anwendertreffen, Berlin, Germany, 2003***)

E. Press releases:

[E1] F. De Vleeschouwer, L. Gérard, **G. Le Roux** and N. Fagel : Les métaux en trace dans la tourbière du Misten. Historique de la pollution dans les Hautes-Fagnes depuis l'époque Romaine, dans "*Hautes Fagnes*", revue trimestrielle de la Société Royale "Les Amis de la Fagne", Fascicule 256, **2004-4**, pp.108-110

[E2] Moore erzählen die Geschichte der Umweltverschmutzung, *Chemie in Labor und Technik*, December **2004**, pp. 450-455. by Uta Neubauer

[E3] Digging up evidence of metal pollution, *Chemistry World, Royal Society of Chemistry, UK*, October **2004**, pp. 44-47. by Katharine Sanderson