

Active Volcanism & Continental Rifting

with special focus on the Kivu rift zone (AVCOR2013)



---- November 12-14, 2013 ----
Hotel Serena, Gisenyi, Rwanda.

- SCIENTIFIC PROGRAM -

Last update: November 9, 2013

Tuesday November 12 – Mardi 12 novembre

- | | |
|---------------|--|
| 08:00 – 09:00 | Registration, Welcome – Enregistrement, Accueil
(Visit the first Posters !) |
| 09:00 – 09:15 | Introduction by the Organizing Committee
Mot d'introduction par le Comité Organisateur |
| 09:15 – 10:00 | Posters Flash Presentation (1 slide max, 3 min each poster)
Présentation flash des posters (max. 1 diapo, 3 min par poster) |

Opening Ceremony – Cérémonie d'ouverture

- | | |
|---------------|------------------|
| 10:00– 10:15 | Official Opening |
| 10:15 – 10:30 | Official Opening |
| 10:30– 10:45 | Official Opening |

10:45 – 11:00 Official Opening

11:00 – 11:30 Coffee Break - Pause café

Session 1 :

Geodesy, ground deformation measurements and modeling of deformations associated to volcanic, tectonic or landslide activity.

Géodésie, mesures des déformations du sol et modélisation des déformations associées à l'activité volcanique, tectonique ou aux glissements de terrain.

11:30 – 12:00 *D.S. Stamps, E. Calais, E. Saria, G. Iaffaldano*
KEYNOTE : *Present-day kinematics of the East African Rift*

12:00 – 12:15 *D. Derauw*
Split Band Interferometry : Theory and potential applications

12:15 – 12:30 *V. Cayol, C. Wauthier, F. Kervyn, N. d'Oreye*
Magma assisted extension in an immature continental rift, based on InSAR observations of Nyamuragira and Nyiragongo Volcanoes

12:30 – 12:45 *D.S. Stamps, D. Koehn, N. d'Oreye, K.H.Ji, K. Burke, E. Saria, X. Rui, B. Smets, F. Albino*
Evidence of Rift-Parallel Deformation Along the Western Branch and Main Ethiopian Rift?

12:45 – 14:30 Official Lunch & posters
Déjeuner officiel & posters

Session 2 – part 1:

Geochemistry, volcanic plume, rock and water.

Géochimie, panache volcanique, roche et eau.

- 14:30 – 15:00 *A. Umutoni et al.*
KEYNOTE : *Lake Kivu Monitoring Program*
- 15:00 – 15:15 *F. Roland, F. Darchambeau, A. V. Borges.*
Methane cycle and methane oxidation in Lake Kivu and Kabuno Bay
- 15:15 – 15:30 *K.A. Ross, M. Schmid, S. Ogorka, F. A. Muvundja, F. S. Anselmetti*
The history of subaquatic volcanism recorded in the sediments of the main basin in Lake Kivu
- 15:30 – 15:45 *G. Yirgu*
Petrogenesis of felsic peralkaline rocks at the Quaternary Kone Volcanic Complex, Main Ethiopian Rift
- 15:45 – 16:00 *C. Balagizi, F. Darchambeau, M. Kassereka Musosekania, S. Bouillon, M. Mapendano, A. Vieira Borges*
Geochemistry of continental rivers of the Virunga Volcanic Province, East Africa
- 16:00 – 16:15 *N. Buliba, F. Kwinja*
Impact de l'arsenic dans l'environnement de Nagarwa au Sud-Kivu
- 16:15 – 16:30 *M. Maqway, C. Class, G. T. Mesko, N. Boniface, S. Many*
A detailed geochronology of the Rungwe volcanic province at the southern end of the East African Rift System

16:30 – 17:00 Coffee Break & posters - Pause café & posters

Session 2 – part 2 :

Geochemistry, volcanic plume, rock and water.

Géochimie, panache volcanique, roche et eau.

- 17:00 – 17:30 *D. Tedesco, O. Vaselli, F. Tassi*
KEYNOTE : *Lake Kivu a unique lake : a resource or a treat for the local population ?*
- 17:30 – 17:45 *O. Vaselli, D. Tedesco, F. Tassi, T. Darrah, M. Mapendano Yalire*
Gas geochemistry at the Nyiragongo volcano and surrounding areas
- 17:45 – 18:00 *N. Bobrowski, G. B. Giuffrida, D. Tedesco, M. Yalire, S. Arellano, C. Balagizi, B. Galle, S. Calabrese.*
Gas emission measurements of the active lava lake of Niyragongo, DR Congo
- 18:00 – 18:15 *A. Kies, O. Hengesch, B. Smets, Z. Tosheva, H. Pfanz, M. Yalire*
CO2 dynamics in mofettes
- 18:15 – 18:30 *G. Mesko, C. Class, N. Boniface, S. Many, M. D. Maqway*
A geochemical constraint on the origin of melts using thermobarometry at Rungwe Volcanic Province, Tanzania
- 18:30 – 18:45 *P. Castillo, D. R. Hilton, S. S. Halldorsson*
A single superplume source with multiple heads supplies melt along the East African Rift System

19:30

Dinner - Dîner

Session 4 :

Seismology, tectonic activity and volcano related seismology.

Séismologie, activité tectonique et séismologie liée au volcanisme.

- 08:30 – 09:00 A. Ayele
KEYNOTE : *Recent seismicity of the Main Ethiopian and implication for earthquake and volcanic risks*
- 09:00 – 09:15 B. Manzunzu, V. Midzi, T. Mulabisani.
The Seismotectonic model of Southern Africa
- 09:15 – 09:30 A. Mangongolo.
Locating water ingress-induced micro-earthquake in the Central Rand Goldfields, South Africa
- 09:30 – 09:45 B. Rusangiza, M. Tuluka, F. Lukaya Nyombo, E. Ossondundu, B. Rukeza, I. Badriyo Agama, C. Assani
Hypocenter determinations of volcanic earthquakes prior to the November 27, 2006 and November 06, 2011 eruptions at volcano Nyamuragira, Western Rift Valley of Africa, DR of Congo
- 09:45 – 10:00 G. Mavonga Tuluka, D. Delvaux, R. Durrheim
Crustal structure beneath four seismic stations at the Southern flank of volcano Nyiragongo revealed from teleseismic P wave receiver function analysis
- 10:00 – 10:15 J.P. Lukindula Wilondja, G. Mavonga Tuluka
Aftershock sequences of February 3, 2008 earthquake in the Kivu Province, Western Rift Valley
- 10:15 – 10:30 S. Fiana Bondo
Les Sources Thermales et Séismicité du Bassin Ouest du lac Kivu : une vue générale

10:30 – 11:00 Coffee Break & posters - Pause café & posters

Session 5 – Part 1:

Volcano monitoring (remote sensing, ground based techniques...).

Surveillance volcanologique (télédétection, techniques de surveillance au sol...)

- 11:00 – 11:30 *N. d'Oreye, B Smets*
KEYNOTE : *The importance of multidisciplinary volcano monitoring: insights from the Nyamulagira 2010 eruption (D.R. Congo)*
- 11:30 – 11:45 *S. Arellano, B. Galle, M. Yalire, N. Bobrowski*
Intensity, magnitude and impact of degassing activity of Nyiragongo volcano during 2004-2013
- 11:45 – 12:00 *F. Albino, F. Kervyn, B. Smets, N. d'Oreye.*
How used Tandem-X Radar Interferometry to detect magma transport and quantify eruptive volumes: the example of 2011 Nyamulagira eruption (D.R. Congo)
- 12:00 – 12:15 *B. Smets, N. d'Oreye, F. Kervyn*
The Nyiragongo hazard: Is the literature misleading?
- 12:15 – 12:30 *A. Fikiri, S. Poppe, M. Bagalwa, M. Kervyn*
Etude de la stratigraphie des dépôts volcaniques du Mont Goma, R.D. Congo, et ses implications pour l'aléa phréatomagmatique à Goma.
- 12:30 – 12:45 *M. Kervyn, A. Feltz, B. Smets, S. Moussoux, S. Poppe*
Calibration of a GIS-based combined thermo-rheological and probabilistic lava flow model for Nyamulagira volcano

12:45 – 14:30 Lunch & posters - Déjeuner & posters

Session 5 – Part 2:

Volcano monitoring (remote sensing, ground based techniques...).

Surveillance volcanologique (télédétection, techniques de surveillance au sol...)

- 14:30 – 14:45 *J. Marti*
Geological constraints of volcanic hazard assessment
- 14:45 – 15:00 *S. Bartolini, A. Cappello, J. Marti, C. Del Negro, R. Sobradelo*
QVAST: a new Quantum GIS plugin for estimating volcanic susceptibility
- 15:00 – 15:15 *R. Sobradelo, S. Bartolini, J. Marti.*
HASSET: A probability event tree tool to evaluate future volcanic scenarios using Bayesian inference. Presented as a plugin for QGIS

Session 6 – Part 1:

Risk, vulnerability and society issues.

Risques, vulnérabilité et sociétés.

- 15:15 – 15:45 *P. Pigeon*
KEYNOTE : *How to understand and to reduce hazard-centered risk prevention policies limitations?*
- 15:45 – 16:00 *C. Michellier, F. Kervyn*
Inventory of institutions in charge of disasters management and risk prevention (Burundi, DRC, Rwanda)
- 16:00 – 16:15 *J.M. Habari*
Présentation du Plan Provincial de Contingence Catastrophes Naturelles et Accidents Majeurs

16:15 – 16:30 E. Nibigira
La réduction des risques des catastrophes au Burundi

16:30 – 17:00 Coffee Break & posters - Pause café & posters

Session 6 – Part 2:

Risk, vulnerability and society issues.

Risques, vulnérabilité et sociétés.

17:00 – 17:30 F. Kervyn, GORISK, GeoRisCA, Vi-X, RGL-GEORISK teams
KEYNOTE : *Science for Society in Central Africa: the geohazards contribution*

17:30 – 17:45 L. Nibigira, H.-B. Havenith, B. Dewals, P. Ozer
Assessing the vulnerability of sites in the East African Rift Valley to natural hazards: case study of Bujumbura, Burundi

17:45 – 18:00 K. Karume, C. Schmidt, N. Karume, K. Kundert, E. Mukengere, B. Safina, R. Schomacher, D. Ganza, O. Azanga, C. Nfundiko
Use of remote sensing for population number determination

18:00 – 18:15 T. Trefon
Precariousness and well-being in Goma: a personal narrative approach

18:15 – 18:30 C. Vye-Brow, M. Auken, E. Cottrel, H. Delgado Granados, S. Loughlin, C. Mandeville, F. Nadim, C. Newhall, P. Papale, S. Sparks
Characterising volcanic hazards and risks

18:30 – 18:45 R. Sobradelo, J. Marti, C. Kiburn
BADEMO: Bayesian Decision Model for Volcanic Crises

19:30 Dinner - Dîner

Session 6 – Part 3:

Risk, vulnerability and society issues.

Risques, vulnérabilité et sociétés.

08:30 – 08:45 C. Michellier, L. Van Thournout, F. Kervyn, J. Wilondja, J.B. Kahindo, M. Dramaix
An attempted assessment of the human health impact of Nyiragongo and Nyamulagira volcanoes SO₂-rich plume

Session 3 :

Geomorphology, structural aspects.

Géomorphologie, aspects structuraux.

08:45 – 09:15 D. Delvaux, B. Smets.
KEYNOTE : *Neotectonic setting of the Kivu rift segment within its intraplate Central African context*

09:15 – 09:30 B. Smets, N. d'Oreye, F. Kervyn, M. Kervyn, K.A. Ross
Are magmatism and volcanism responsible for the structures and morphology of the Kivu Rift Basin?

09:30 – 09:45 G. Ganza, E. Mugisho Birenjira
Contrôle structural de la géomorphologie du secteur de Katana (Sud-Kivu, RD Congo)

09:45 – 10:00 S. Draidia, H.B. Havenith, T. Almaz, L. Nibigira, O. Dewitte, P. Tréfois, A. Nkuzimana.
Contribution to the understanding of the mechanisms controlling slope instabilities near Bujumbura-Burundi

10:00 – 10:15 S. Butara Mubane
Glissements de terrain et cause de leur déclenchement : Cas de la cité d'Uvira et sa partie méridionale (Sud Kivu, République Démocratique du Congo)

10:15 – 10:30 Patient Migombano Useni
Évaluation et cartographie par SIG du risque lié aux glissements de terrain à Bukavu (Sud Kivu, RD CONGO)

10:30 – 11:00 Coffee Break & posters - Pause café & posters

Splinter discussions :

Simultaneous group discussions about resp. 1) Tectonic, 2) Monitoring, and 3) Hazards, Vulnerability & Risks

Groupes de discussions simultanément sur les sujets resp. de 1) Tectonique, 2) Surveillance et 3) Aléas, vulnérabilité et risques

11:00 – 11:40 *Splinter discussion 1 in 3 groups
(tectonic/monitoring/hazards, vulnerability and risk)*

11:40 – 12:20 *Splinter discussion 2 in 3 groups
(monitoring/hazards, vulnerability & risks/ tectonic)*

12:20 – 13:00 *Splinter discussion 3 in 3 groups
(hazard, vulnerability & risks/tectonic/monitoring)*

13:00 – 14:00 Lunch & posters - Déjeuner & posters

14: 00 – 15:00 *Posters
(Resolutions writing for chairmen – Rédaction des résolutions
par les présidents de sessions)*

15:00 – 15:45 Resolutions restitution – Lecture publique des résolutions

15:45 – 16:00 Closing session - Session de clôture

16:00 – 16:30 Coffee Break - Pause café

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- POSTERS -

Session 1 :

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Géodésie, mesures des déformations du sol et modélisation des déformations associées à l'activité volcanique, tectonique ou aux glissements de terrain.

- Balemire C. et al.
Interet de l'approche sur la vulnerabilite des ouvrages face au glissement de terrain: cas du glissement de Funu a Bukavu
- Delcamp A. et al.
Volcano instabilities and debris avalanche hazard in the East-African Rift

Session 2:

Geochemistry, volcanic plume, rock and water.

Géochimie, panache volcanique, roche et eau.

- Calabrese S. et al.
Preliminary data on trace element emissions from Niyragongo volcano (DR Congo)
- Fontijn K. et al.
The Rungwe Volcanic Province, Tanzania: Physical Volcanology of the Holocene explosive eruptions – and implications for hazard assessment
- Giuffrida G. et al.
A wider view on possible causes of observed BrO/SO₂ – CO₂/SO₂ correlations – during volcanic degassing variations
- Kakonkwe N'Konzi C.
Petrology and Geochemistry of lavas from the Walungu trough (South-Kivu, East African Rift System): geodynamic significance
- Kasereka Musosekani M. et al.
L'enregistrement continu du CO₂ et du radon dans un Mazuku
- Lemdjou Y.
Caractérisation pétrographique des indices de fer dans le complexe anorogénique tertiaire de Bana (ligne volcanique du Cameroun)
- Mugaruka Bibentyo T. et al.
Pétrographie et Géochimie des gneiss kibariens de Miowe-Bulambika à Bunyakiri, Sud-kivu, RDCongo
- Mugisho Birhenjira E. et al.
Nouvelle approche sur la mise en place des coulées basaltiques cénozoïques du secteur Nord-Ouest de la Ville de Bukavu/RD Congo
- Roland F.
Contribution to the description of nitrogen cycle in the surface waters of Lake Kivu

- Shubazi Kabemba M.
Géochimie des roches métabasiques Kibariennes (Bunyakiri et Mitwaba/RDC, Mageyo/Burundi et Rwanda) et implications géodynamiques
- Smets B. et al.
The “mazuku hazard” in the Goma region, D.R. Congo

Session 3 :

Geomorphology, structural aspects.

Géomorphologie, aspects structuraux.

- Byamungu B.
Les risques que court la ville de Goma et la lithologie de la carrière MUGARA
- Dewitte O. et al.
Landslide hazard in the North Tanganyika - Kivu rift zones: current knowledge and research perspectives
- Doelesso A.E.
Paleomagnetic and Petrographic comparison of differently named basalts from the Omo-Turkana Depression, southwestern Ethiopia: implication for timing of volcanism
- Kalikone Buzera C.
Contribution à l'étude stratigraphique et structurale de Mulambi, chefferie de Kaziba, Sud-Kivu, RD Congo
- Montfort Bagalwa R. et al.
L'alignement volcanique des cônes Nyarutsiru-Nyabyunyu-Bbuhimba-Kirunga: les dépôts phréatomagmatiques et magmatiques dans le secteur sud-ouest du volcan Nyiragongo, en bordure du lac Kivu, RDC
- Mushayuma H.
Contribution à la caractérisation des événements dommageables du sol, ses problèmes et ses perspectives à Irhambi/Katana

- Ongezo Muzaliwa S.
Sediment yields estimation and identification of their sources in lake tanganyika basin
- Poppe S. et al.
The Virunga Volcano Province: A new volcano-structural map based on morphological analysis of a high-resolution Digital Elevation Model
- Wood D. et al.
Basin history of the eastern graben of Lake Kivu from marine reflection seismic data

Session 4 :

Seismology, tectonic activity and volcano related seismology.

Séismologie, activité tectonique et séismologie liée au volcanisme.

- Birimwiragi Namogo D. et al.
Analyse fréquentielle des essais des séismes à longue période ayant précédé l'éruption du volcan Nyamulagira du 06 novembre 2011
- de Gelder G. et al.
Volcanic tremors and transients: 7 days of seismic recordings at Nyiragongo Volcano summit (Democratic Republic of Congo)
- Faith Mulabisana T.
Compiling a homogenous Earthquake Catalogue for Southern Africa
- Kyambikwa Milungu A. et al.
Analyse de l'activité magmatique du volcan Nyamulagira par la mesure sismique des amplitudes en temps réel (rsam) durant la période du 1 mars au 6 novembre 2011
- Lindsey N. et al.
Comparison of seismological, geodetic, and geological observations of rifting in East Africa: Diffuse vs localized deformation
- Mapuranga V.P.

New Seismic Hazard Maps of Zimbabwe

- Mifundu Wafula D.
Impacts of tectonic earthquakes in the Western rift valley of Africa on the volcanic activity of Nyiragongo, Virunga region
- Ngindu Buabua D.
Nouvelle Carte Sismique de la RDC et l'implication tectonique des seismes majeurs du Rift de grands lacs
- Ngongang Wetie A. et al.
Seismic Hazards Assessment of Cameroon
- d'Oreye N. et al.
What are the hazards associated to a seismic sequence in the Kivu Rift Basin? The 2008 Bukavu/Cyangugu earthquake example
- Osodundu E. et al.
Tremors volcaniques associés à l'éruption du Nyamulagira du 06 Novembre 2011
- Zal H. J. et al.
Active fault systems of the Kivu rift and Virunga province, and implications for geohazards

Session 5 :

Volcano monitoring (remote sensing, ground based techniques...).

Surveillance volcanologique (télédétection, techniques de surveillance au sol...).

- Martins J. et al.
The magmatic system beneath Torfajökull volcano, Iceland: Combining radar and seismic interferometric observations
- Mifundu Wafula D. et al.
The time discrepancy between the effective eruption and rock failure for the eruptions of Nyamulagira and Nyiragongo volcanoes in the Virunga region

- Nechia Wantim M. et al.
Reconstructing past eruptions at Mount Cameroon volcano (West-Central Africa) using Remote Sensing and GIS techniques: case of the 2000 eruption
- d'Oreye N. et al.
A permanent geodetic GNSS network to monitor ground deformation in the Virunga Volcanic province
- Poppe S. et al.
Hazard implications of phreatomagmatism along the urbanised Lake Kivu Northern shoreline, D.R.Congo
- Smets B. et al.
Development of a stereographic time-lapse camera system to study and monitor the lava lake activity at Nyiragongo volcano (North Kivu, D.R. Congo)

Session 6 :

Risk, vulnerability and society issues.

Risques, vulnérabilité et sociétés.

- Mangasini F.
Lava chemistry and dual eruption at Oldoinyo Lengai volcano: basis of environmental squalor in north-eastern Tanzania
- Michellier C. et al.
Urban development of Goma city: increasing risk?