

Physics seminar

Tuesday, 14th December 2010 at 16h15

(coffee at 16h00)

Campus Limpertsberg

Room BS 0.03

Prof. Antoine Kies

Université du Luxembourg

“Radiological and CO₂ investigations in a degassing mofette and around a volcano”

In the frame of GORISK (Stereo II) program geophysical and geochemical investigation were performed in the vicinity of the Nyiamulgira volcano (Goma, DRC, Democratic Republic of Congo). The RPR contribution was measurements of CO₂ and radon levels in the subsoil and in the atmosphere and to link them to volcanic activity and the risk assessment to the population. CO₂ degassing mofettes (mazuku) and vents (mazuku, evil wind in Swahili) are common in the area, even in inhabited areas. The study of their dynamics and possible link to volcanic activity is the subject of the research as the risk assessment for the population. The study is part of the research undertaken at the OVG (Observatoire Volcanologique de Goma). A serious draw back of the study was/is the insecurity of the instruments.

In Tuscany (Italy) close to Rapolano a CO₂ degassing mofette is extensively monitored, without security problems. The CO₂ concentrations in soil and atmospheric air close to the ground of the mofette are so high that the area was chosen as a natural laboratory for experiments on plant physiology. In collaboration with professor Hardy Pfanz, a plant disease expert from the University of Essen, a 6 m tower, built and equipped by LPR, in the mofette allows to measure temperature, humidity and CO₂ levels at different heights. The continuous pattern of the tower data, combined with data from a weather station, will be presented and discussed. The research in Rapolano allows gathering knowledge on the behavior of mazuku, difficult and nearly impossible to obtain in Goma.

The conference will end with a presentation of the risk due to the Nyiragongo volcano and views of the worldwide biggest lave-lake.

Next Physics Seminars

- **Tuesday, 11th Jan. 2011** **Johannes Fischer, PhD student, the University of Luxembourg**
in Belval, 16:15 “Annealing of binary stacks”
- **Tuesday, 25th Jan. 2011 :** **Prof. Dr.-Ing. Heike Emmerich,**
Campus Limpertsberg, 16:15 **Lehrstuhl Material-und Prozesssimulation Universität Bayreuth**
“Phasenfeldsimulation”
- **Tuesday, 8th March :** **speaker and topic will be announced shortly**
at Belvaux, 16:15