Geophysical Research Abstracts, Vol. 9, 02328, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-02328

Global Wireless Sensor Network for Volcano Gas Monitoring

Y. Zhang (1), M. Kihlman (2), C. Rivera (1), M. Johansson (1), **B. Galle** (1), A. Morales (3), M. Herrera (3), W. Strauch (3), C. M. Zamarripa (4), H. D.Granados (5)

(1) Chalmers University of Technology, Gothenburg, Sweden

(zhangy@chalmers.se / Fax: +46 31-7721884 / Phone: +46-31 7725655)

(2) KEDU Electronics Company

(3) INETER, Managua, Nicaragua

(4) CENAPRED, Mexico City, México

(5) Instituto de Geofísica, U.N.A.M., Mexico City, México

Every year volcanic emissions bring up a big amount of gases to the atmosphere and even stratosphere. The global climate is greatly affected by volcanic activities all over the world. To get a complete understanding of the influence of volcanoes to the global climate, it is necessary to build a global network for volcano monitoring. Combining optical remote sensing and wireless network technology, the NOVAC project monitors and performs research on over 20 active volcanoes all over the world. The NOVAC global sensor network is a large distributed system, which includes autonomous intelligent sensors, local servers and main servers. In one volcano the sensors are connected to a server at the local observatory. Via Internet, the observatory forward the spectra data received from the sensors to the FTP servers located in BIRA, Chalmers and UHEI. Spectra data and evaluated results will be stored in database servers and shown to users who have the right to visit the database via Internet. Time synchronization in this system is done by GPS receivers inside the sensors. The first subnet of the global sensor network has been set up at San Cristóbal Volcano in Nicaragua. Spectral data is being sent to the main server in Chalmers University of Technology in Sweden.