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GEOCHEMISTRY OF THE BITUNGULU LAVA FLOW OF THE JANUARY 17 th, 2002 NYIRAGONGO VOLCANO ERUPTION (VIRUNGA, EAST-AFRICAN RIFT)

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The East African rifts system is defined by structural and magmatic features. The dating of volcanic strata reveals a logic model in the spatial development of this rifts system in which is the Virunga volcanic province. This volcanic province, recently active in mid-Miocene, is above an abnormally hot asthenosphere [1]; some authors believe, moreover, that it is representative of hot spots volcanism in the African tectonic plate [2]. It is in the western branch of the East African rift that is localized the Virunga volcanic province which includes the Nyiragongo volcano.

Nyiragongo volcano is well known for its lava lake and its eruptive dynamism of Hawaiian type [3]. In 1995, the surface of this lava lake solidified; leaving thus the magma below. The increasing of the pressure inside the solid layer would facilitate the discharge of the magma in the main fractures of the flanks of Nyiragongo. Besides this magmatic pressure, the local fractures system that results from tectonic seismicity common in the region is an important factor for the eruptive dynamism of the Nyiragongo. By way of illustration, some assumptions suggest that at the time of the eruption of January 17, 2002, the energy which contributed to the massive fracturing was helped by regional tectonic events. This events consensus was then sufficient to cause an eruption. Therefore, this eruption of 2002 had three leaving lava points thus corresponding to three different branches of lava flows, including Shaheru, Munigi and Bitungulu lava flows.

The objective of this work was to describe the geochemical characteristics of rocks of the Bitungulu lava flow of the January 17, 2002 Nyiragongo volcano eruption.
In addition to the description in situ, samples of these rocks were analyzed in the University of Lubumbashi laboratory. Results show a high concentration of silica and mineralization dominated by nepheline. These rocks are basalts but they are close to trachy-basalts.

References

[1] *Acta Vulcanologica* **12-15**, EBINGER, C. (2002-2003), 9-16.
[2] *Tohoku Univ*., HAMAGUCHI H. and Zana N., (1983), 35-46.
[3] *Acta Vulcanologica* **12-15**, SADAKA K., (2002-2003), 87-100.