

**VOLCANOLOGICAL AND
PETROLOGICAL STUDY OF
VOLCANIC ROCKS FROM THE
NORTH WEST FLANK OF OKU
VOLCANIC COMPLEX
(CAMEROON VOLCANIC LINE):
CONSTRAINTS FROM
MINERALOGY AND
GEOCHEMISTRY**

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In Northwestern Cameroon, the northwest flank of Mount Oku forms part of the continental sector of the Cameroon Volcanic Line (CVL). It is one of the stratovolcanoes that forms the Oku Volcanic complex and lies between 10°9'0"E and 10°19'0"E, and latitude 6°18'0"N and 6°28'0"N. The aim of this paper is to bring new insight into the volcanic rocks of the NW flank of the complex taking into consideration the petrography, geochemistry and the mineral compositions of the volcanic rocks in the study area. The studied volcanic rocks is made up of basanite, basalt, hawaiite and rhyolite with their essential minerals: olivine, pyroxene, plagioclase feldspars, alkaline feldspars and oxides. From the major and trace element study, lava studied indicates enrichment in LREE compared to the HREE, typical of alkaline rocks and rocks of the NW flank of Mt Oku have same profile with OIB geochemical characteristics which is in concordance with the petrography and mineralogy of the CVL lava. Mineralogically, Olivine composition varies from chrysolite (Fo₂₄ - 30 %) to hyalosiderite (Fo₃₀ - 35 %) in the basalts and hyalosiderite (Fo₄₀ - 47 %) in hawaiite. Clinopyroxenes in basanites is diopside, in hawaiite is augite and in trachyte is hedenbergite; for the plagioclases, labradorite, andesine and oligoclase occurs in basanite, in hawaiite, labradorite, andesine and oligoclase occurs meanwhile in trachyte, sanidine, andesine and albite are present. Oxides plot in the field of titanomagnetite which forms a solid solution serie between two poles: the ulvospinel (Fe₂TiO₄) and the magnetite pole (Fe₂O₄). Projection of the feldspars from the basaltic lava of the NW flank of Oku volcanic complex four states of crystallisations ranging from <700°C- 1000°C.