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Geo-dynamic activity of the fluvial flows of north east part of Kosova

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Abstract

The formation and the development of the landscape of this part, beside the afore-mentioned geological factors, a very important role has played the external morphogenetic phenomena such as climatic, hydrographical, pedological and vegetative one.
In the context of external morphological phenomena of this section, the geo-dynamic activity of the fluvial flows takes an important place, which distinguishes this area, particularly with the dense network of rivers and streams. This fluvial property associates with significant amount of rainfall, the composition of less permeable rock and on this basis, the large values of density and depth of fragmentation of the landscape of this part, especially in the mountain of Kopaonik.
Thus, in the South West of these mountains runs the median flow of the river Ibër, between Mitrovica and the border with Serbia and the lower flow of the river Sitnica, the right branch of the river Ibër, which, by size, come immediately after the Drini i Bardhë river. However, the right branches and the most important ones of the river Sitnica cross the graben pond of Llap and the territory of Gollak especially the Llapi one, which are also distinguished for the high values of fluvial flows density.

Key words: The geo-dynamic; Hydrographical; Morphogenetic; River.

1. Introduction

In the context of external morphological phenomena of this section, the geo-dynamic activity of the fluvial flows takes an important place, which distinguishes this area, particularly with the dense network of rivers and streams. This fluvial property associates with significant amount of rainfall, the composition of less permeable rock and on

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2. Materal and Methods

Between the natural physical-geographical units of Kosova area, its North East part takes an important place followed by characteristic features. Natural boundaries of this area are the median valley of the river Ibër from Mitrovica to Bistrica river embouchure (the right branch) in the North West, the ridge mainly hilly of Çyçavicë in the South West, the river valley of Graqanica and the upper one of the river of Ballaban in the South East and in the East.

While all the rest North East and north parts up to Pançiç peak (2017m) passes by the boundary line with Serbia-Montenegro. There is a typical expansion North West – South East with a length about 77km and width 12-40 km, while the highest altitude is on the corner North West of Pançiç peak, among the highest in Kosova (Bulliqi 2000) .

Comprehensive approach of the geomorphologic features of this part based on the factors, conditions and various phenomena of its landscape, modeling have been done in order to be familiar with assets (minerals, agricultural land fund, and different materials of construction) and their much rational use.

The realization of this work is done according to a long and rigorous investigation work, is used a contemporary scientific literature and a lot of expeditions in the terrene, which helped us in accumulation, systematization and interpretation of the data about geomorphologic factors, conditions and phenomenon of this part of Kosovo.

3. Results

To understand the morphological role of this network it is to address not only the factors and conditions where the activity takes place, but in particular the conditions of formation of monthly, seasonal, and annual flow supplies. In the formation of this dense fluvial network influenced strongly the dense network of tectonic fragmentations, which traverses the extent of strong magma and terrigenous rocks, thus increasing the corrosive ability of these flows, especially in the areas of terrigenous territories of Gollak. Even though most of the major fluvial flows in the outskirts cross in the South West of the periphery of this part, representing both its natural limit in this respect, they play a key morphological role in landscape modelling through constant changes of local bases of erosion. Thus, the continuous deepening of riverbeds by the fluvial flows, especially the main river Ibër, leads to continuous reduction of the base level of erosion in the entire system of its embranchment, which has reached by the regressive erosion the peak height of the landscape in this area. Through this morphological phenomenon, this network exerts a very rapid landscape- forming activity, thus constituting the main external factor, which has resulted in the formation of complex of the respective landscape. Transformations effected by the landscape today from this network are quite well reflected in the emphasized morphological contrasts between the deep and relatively narrow valleys with the mountainous and separating hilly ridges between them. As noted above, in general, there is a close connection and almost direct between the performances of climatic elements of this area, particularly rainfall, and temperatures, the monthly, seasonal and annual performance of the water regime of the fluvial flows, by adding also the role of its geological factors. With the exception of the Ibër and Sitnicë River, the fluvial network of their embranchment is characterized by a torrential flow regime, making it of particular importance in the modeling of the landscape. Obviously the more complete data and for a period of several years were collected for the Ibër River, Llapi, and Sitnica, which allow us to understand the degree of morphological operations of this network through the fluvial volume, which it collects and circulates in all landscape space (Table 1).

Annual performance of flow regime of these rivers is observed that it generally appears relatively rich and with all annual stretch appearing very well in the annual average values of their supply.