

## SOUTH MORAVA MORPHOSTRUCTURAL ZONE (EAST PART OF BALKAN PENINSULA)

**Abstract:** South Morava morphostructural zone (east part of Balkan peninsula). The article represents a preliminary general view of the regional disposition and morphostructural essence of the South Morava morphostructural zone. This north-west marginal morphostructural unit of the Bulgarian continental micro morphotecture (from the east part of Balkan Peninsula – Tzankov, Stankova, 2014) is located in the border region of East Serbia, partial in West Bulgarian and in the north border part of the Republic of Macedonia (fig. 1).

The west border of the South Morava morphostructural zone coincide with the primary suture between the Bulgarian continental microplate (to the east) and the Carpathian, Dinarian and Pind continental microplates. This very important tectonic contact was predetermined the necessity of origin, the place, the direction, the form and the most important internal pattern elements of the South Morava morphostructural zone.

**Keywords:** Bulgarian continental microplate, morphostructural zone, morphostructural regions, Quaternary morphogenetic

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The article represents a preliminary general view of the regional disposition and morphostructural essence of the South Morava morphostructural zone (fig. 1). This north-west marginal morphostructural unit of the Bulgarian continental micro morphotecture (from the east part of Balkan Peninsula – Tzankov, Stankova, 2014) is located in the border region of East Serbia, only partial in West Bulgarian (near the town of Tran – fig. 1) and in the north part of Macedonia (between the border and Kriva and Pchnya river – fig. 1). The proposed name of the observed morphounit is coming from the South Morava river.

The west border of the South Morava morphostructural zone coincide with the north-west boundary of the Bulgarian continental micro morphotecture (fig. 1). It is beginning in the flow together between the Svrlig Timok river and Targoviste Timok river (in the town of Knjazhevats), following the Svrlig Timok river valley (to the town of Svrlig), peril using the north-west and the west slopes of the Svrlig mountain ( to the Nishava river between the towns of Nish and Nishka banya – fig. 1). The west border is prolonging on the Kutinska river valley (between Suva mountain and Selichevitsa mountain – fig. 1), peril using the south slop of the Selichevitsa mountain and is following the South Morava river valley to the town of Vrania (fig. 1). The last boundary segment is including the distance between the town of Vrania and the village of Vladovo and Pchinya river valley to it flow together with the Kriva river (in the Republic of Macedonia – fig. 1).

The west border of the South Morava morphostructural zone coincide with the primary suture between the Bulgarian continental microplate (to the east) and the Carpathian (to the north of Nishava river valley) and Dinarian continental microplates. This very important tectonic contact was predetermined the necessity of origin, the place, the direction, the form and the most important internal pattern elements of the South Morava morphostructural zone.

The south border of the investigated morphounit coincide with the Kriva river between the flow together with Dragovishtitsa river and Pchinya river (fig. 1). It correspond with the fault boundary between the zone and the north slope of Osogovo mountain from the Bregalnitsa morphostructural area (most west part of the Rila Rhodopean morphostructural zone).

The east border of the South Morava morphostructural zone follow the Targovishki Timok river valley (to the village of Shugrin – fig. 1) and the right tributary of Temska river, Temska river and Nishara river to the village of Krupac. This border segment has a fault character. It divides the investigated morphounit from the Midzhur morphostructural area (Hemus morphostructural zone). The most south prolongation of the east border coincides with the part of Nishava river valley and Erma river to the Bulgarian-Serbian boundary (fig. 1). This border segment divides the South Morava morphostructural zone from the Subbalkan morphostructural zone. The last border segment follows the Erma river valley (in Bulgaria and Serbia), the Bozhichka and Dragovishtitsa river valley (in Serbia) and the Dubrovnichka river valley (in the Republic of Macedonia). It represents a system of different oriented faults between the South Morava morphostructural zone and the Vitosha morphostructural area (Kraishte – Sarnena gora morphostructural zone).

The general direction of the South Morava morphostructural zone is submeridional (fig. 1). The morphounit is 156 km long and between 65 (between the village of Dollevats on the South Morava river and the village of Krupats on the Nishava river) and 22 km (between the village of Predezhane on the South Morava river and the village of Klisura on the Erma river) width. The territory of the zone is around 5811,5 km<sup>2</sup>.

The internal morphostructural pattern of the observed morphounit (SM) represents a mosaic from fragments (blocks) with different dimensions, form and directions (fig. 1). They can be grouped in two morphostructural areas (fig. 1). The north of them – the Nishava morphostructural area includes (fig. 1) the Tresibaba (fig. 1-1), Turiya (fig. 1-2), Svrlig (fig. 1-3), Babichka gora (fig. 1-4), Suva planina (fig. 1-5), Telovats (fig. 1-6), Vlashka planina (fig. 1-7) and Ruy morphostructural region (fig. 1-8). The south - Surdulitsa morphostructural area includes the Ostrozub (fig. 1-9), Gramada (fig. 1-10), Chemernik (fig. 1-11), Vlasina (fig. 1-12), Vardenik (fig. 1-13), Byasna kobila (fig. 1-14), Doganitsa (fig. 1-15), Dukat (fig. 1-16), Shiroka planina (fig. 1-17), Lesnitsa (fig. 1-18), Kozyak (fig. 1-19), German (fig. 1-20) and Bilino morphostructural region (fig. 1-21). The territory of thie regions is represent on the table 1.

**Table 1**

**Territory of the morphostructural regions of the South Morava morphostructural zone**

<b>Morphostructural regions</b>	<b>km<sup>2</sup></b>
1 Tresibaba	307,00
2 Turya	166,50
3 Svrlig	342,25
4 Babichka gora	409,25
5 Suva planina	626,00
6 Telovats	85,25
7 Vlashka planina	555,25
8 Ruy morphostructural region	395,00
9 Ostrozub	206,25
10 Gramada	244,25
11 Chemernik	119,00
12 Vlasina	217,75
13 Vardenik	301,00
14 Byasna kobila	368,25
15 Doganitsa	397,50
16 Dukat	203,25
17 Shiroka planina	98,00

18 Lesnitsa	134,25
19 Kozyak	339,00
20 German	117,50
21 Bilino morphostructural region	179,00
<b>Total</b>	<b>5811,5</b>

The Nishava morphostructural area is predominantly limited from Carpathian continental microplate to the west and Hemus morphostructural zone to the east (fig. 1 ). It morphostructural regions (except the triangular Tresibaba morphostructural region – fig. 1) are prolonged in north-west – south-east direction. The same orientation show the neighbor Midzhur morphostructural area from the Hemus morphostructural zone.

The Surdulitsa morphostructural area is formed between the Dinaric continental plate to the west and Vitosha morphostructural area from the Kraishite-Sarnena gora morphostructural zone to the east. It morphostructural regions have irregular isometric or west-east elongate form.

The indicated differences between the both morphostructural areas show about the diverse conditions of the morphogenesis. It is probably connected with the influence of the neighbor border lands.

The South Morava morphostructural zone distinguishes from the other regional morphounit of the Bulgarian continental microplate through the almost full absence of the relics from the primary orthoplen. It is speaking for the very intensive Quaternary morphogenetic processes. The more or less secondary deformed fragments from the early generations of concentric morphostructures existed in all territory of the zone (fig. 1). It is one other argument about the very intensive Quaternary morphogenetic deformations.

The specific origin, the place, the direction, the form and the most important internal pattern elements of the South Morava morphostructural zone are predetermined from building of the first-rate tectonic suture between the Bulgarian, Dinaric, Pind and Carpathian continental microplates. It is one of the very important seams, which have weld together the little continental microplates (fragments) in the post Mesozoic monolith south European margin – Neo Europe.

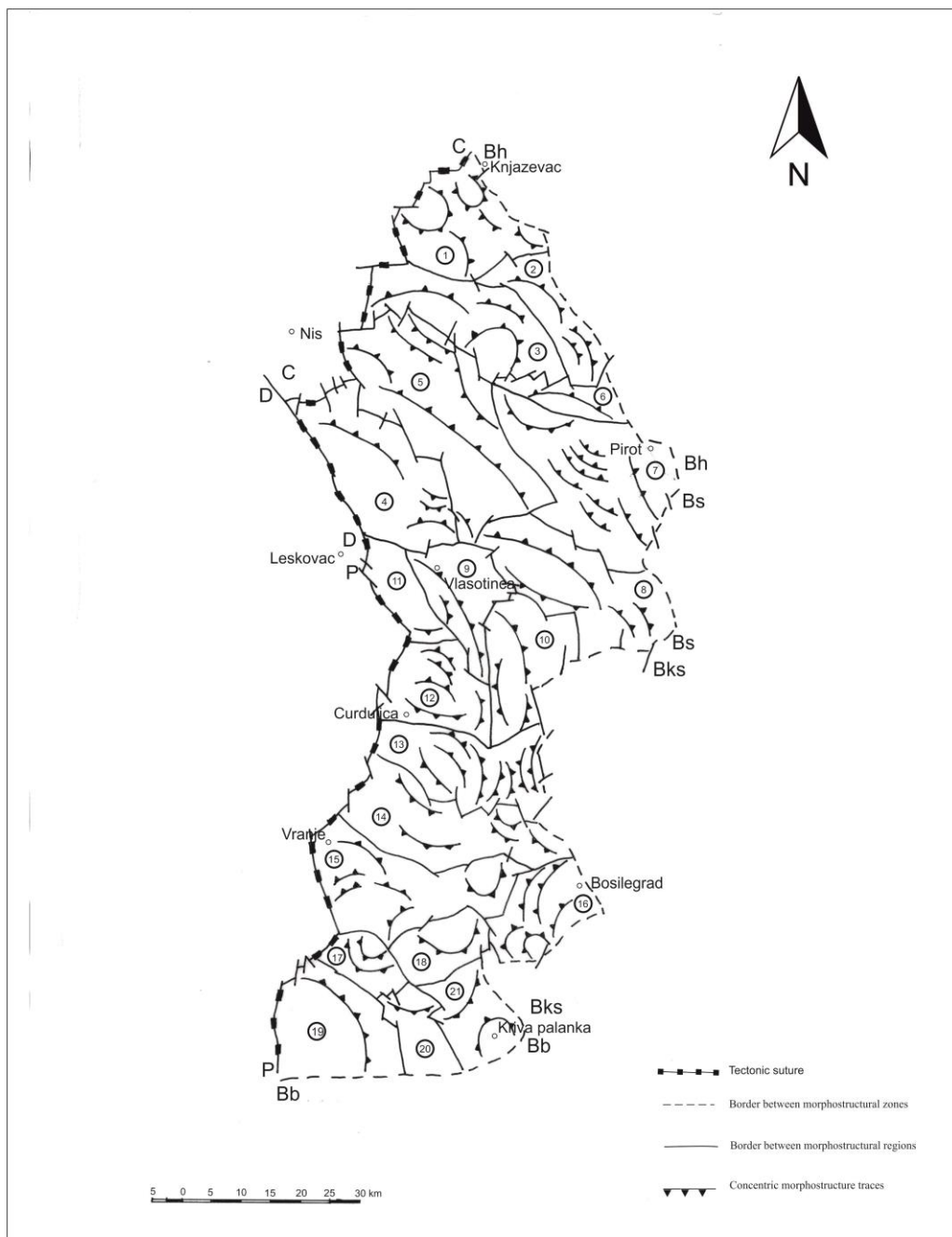


Fig. 1 Morphostructural regions of the South Morava morphostructural zone

**Nishava morphostructural area:** 1 – Tresibaba, 2 – Turiya, 3 – Svrliq, 4 – Babichka gora, 5 – Suva planina, 6 – Telovats, 7 – Vlashka planina, 8 – Ruy morphostructural region; **Surdulitsa morphostructural area:** 9 – Ostrozub, 10 – Gramada, 11 – Chemernik, 12 – Vlasina, 13 – Vardenik, 14 – Byasna kobila, 15 – Doganitsa, 16 – Dukat, 17 – Shiroka planina, 18 – Lesnitsa, 19 – Kozyak, 20 – German, 21 – Bilino morphostructural region.

Borders with the neighbor micro morphotectures: C-C – Carpathian, D-D – Dinarian, P-P – Pindian, Morphostructurelle zones and areas of the Bulgarian continental micro morphotecture: Bh-Bh – Hemus morphostructural zone, Bs-Bs – Sub Balkan morphostructural zone, Bks-Bks – Kraishhte-Sredna gora morphostructural zone, Bb-Bb – Belasitsa morphostructural zone

## References:

1. **Tzankov, Tz., Sv. Stankova.** Borders and principal regional units of the Bulgarian Continental Micro Morphotecture (East Part of Balkan Peninsula). *Acta Scientifica Naturalis, University of Shumen*, volume 1, 2014, 218-232