most active territories of the two structures are situated above the slopes of a big regional raising of the astenosphere.

COMPARISON OF THE SEISMOGENIC LAYERS IN REGIONS OF HIGH SEISMIC ACTIVITY IN BULGARIA AND ALGERIA

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The objects of the investigation are the following 3 regions of high seismic activity: Plovdiv-Chirpan (Bulgaria), Jambol (Bulgaria) and Chle-Tenes (Algeria). The Plovdiv-Chirpan and Jambol regions are located in Southern Bulgaria. The regions are part of the Srednogorian tectonic structure, where postalpian, Paleogene and neogene-Quaternary grabens are widely presented. The Chle-Tenes region is placed in the Western coastal part of Northern Algeria. The area of study is a part of the Magrebidies, where the post-alpian grabens with thick Neogene-Quatrnary deposits are formed locally.

The regularities of the shock distribution permit the differentiation of seismogenic layers, 4 seismogenic layers are established in the regions of Plovdiv-Chirpan and Jambol regions and 3 seismogenic layers in Chlef region. The layers are situated in the following depths:

Plovdiv-Chirpan	-	5-17,	20-30,	35-35,	50-60 km;
Jambol	-	7-13,	16-22,	25-32,	35-42 km;
Chlef-Tenes	-	6-17,	20-30,	35-45 km.	

The results of the comparison of the seismogenic layers in the different regions are the following:

1. The levels of the seismogenic layers in the regions of Plovdiv-Chirpan and Chlef-Tenes are similar. In the Jambol region the levels are in narrower depth range and they are closer to the earth surface.

2. In the Chlef-Tenes region the big part of seismic manifestations are mainly in the first seismogenic layer. There are a few hypocenters in the second and third layers. In the other two regions the seismic activity of the all layers is significant.

3. Within the boundaries of the seismogenic layers, some depth ranges with concentrations of hypocenters of the shocks can be examined:

Plovdiv-Chirpan	-	5-6,	10-12,	15-17,	20,	24-25,	30,	40 km;
Jambol	-	10-12,	19-21,	30 km;				
Chlef-Tenes	-	7-8,	10-11,	20 km.				

The depth ranges of hypocenter concentrations are situated on the boundaries or in the middle parts of the seismogenic layers.

4. In the all regions of study the earthquakes in the first seismogenic layer are with the highest magnitude. In the Jambol region the maximal magnitude decreases relatively slowly in the second, third and forth layers. In the Plovdiv-Chirpan and Chlef-Tenes regions the decrease of the maximal magnitude in the second and third layers is sharper.

The highest energetic potential of the first seismogenic layer is related with the significant problems of the seismic environmental geology in the three regions.

TERTIARY PLUTONIC ROCKS FROM EAST RHODOPE IN BULGARIA AND GREECE

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The East Rhodope is characterized by an intensive Tertiary orogenic activity manifested by both plutonic and volcanic magmatism. The plutonic rocks of two areas from the East Rhodope, one from Bulgaria and one from Greece, namely the Zvezdel and Leptokarya-Kirki intrusions, are studied and compared.

The magmatism in both areas is strongly controlled by tectonic activity. The distribution of the various intrusions is related to deep faults of mostly NE-SW and S-N direction. The Zvezdel plutonics comprise rocks ranging in composition from monzogabbro to tonalite through qz-gabbro, qz-monzogabbro/qz-monzodiorite and qz-monzonite. They are medium-grained with monzonitic to ophitic and porphyritic textures. Their modal composition is plagioclase, K-feldspar, quartz, ortho- and clinopyroxene. Less abundant is biotite and olivine. The Leptokarya-Kirki intrusions are classified as qz-gabbro, qz-diorite, qz-monzogabbro/qz-monzodiorite, tonalite and granodiorite. Their mineralogical composition is plagioclase, K-feldspar, quartz, ortho- and clinopyroxene biotite and hornblende.

The Zvezdel rocks have characteristics of the high-K calcalkaline to shoshonitic series while those of Leptokarya-Kirki of the calc-alkaline to high-K calc-alkaline series. An overall increase of potassium towards Zvezdel is obvious. Chondrite-normalized REE patterns are similar in both areas except HREE which are almost unfractionated in Zvezdel. SREE is lower in Leptokarya Kirki. Discrimination diagrams used show a volcanic arc granites setting for the Zvezdel and Leptokarya-Kirki rocks.

Major, trace and REE abundances along with the presence of cumulitic phases