with the fact that biotite gives an isochron only in BGD indicate that: 1) The cooling rate of BGD is slower than the rest rock types, and 2) The K-Ar isotopic system for Kf in BGD was open for longer time resulting in a homogenous feeding of biotite with radiogenic Ar. In this way biotite was enriched in 40Ar.

The closure temperatures of hornblende, biotite and K-feldspar, the K-Ar ages obtained and the available Rb-Sr mica ages were used to decipher the thermal history of the southern Sithonia Plutonic Complex. The estimated average cooling rate for HBGD+HBTON was $\Delta^0C/\ \Delta t = 40.2^0C/Ma$, nearly the same as that for the whole south part of the complex (HBGD+HBTON+BGD) estimated to $\Delta^0C/\ \Delta t = 40.1^0C/Ma$. This cooling rate is lower than the cooling rate estimated for the TMG of the northern part of the Sithonia Plutonic Complex ($\Delta^0C/\ \Delta t = 60^0C/Ma$). For the last cooling rate zircon ages have also been used.

Future estimations of precipitation in the Balkan Peninsula with the use of a Regional Climate Model

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During the last decades there were a lot of discussions regarding climate changes. Many climatological studies have focused on precipitation and drought due to their important role for many human activities. South Europe and especially the Balkan Peninsula is a prominent and vulnerable area, mainly due to its complex topography. This study aims to estimate the changes in the precipitation regime at the Balkan Peninsula through the end of the 21st century using a Regional Climate Model (RCM).

The daily precipitation data used are derived from an updated Regional Climate Model, the RACMO2, developed by the Royal Netherlands Meteorological Institute (KNMI) with the GCM ECHAM5 as a «parent» model. For the future climate projections the SRES A1B scenario is used. The spatial resolution of the model is 25x25 km and the data cover the whole European area. Of the 14136 grid points of the domain, those corresponding to the Balkan Peninsula have been chosen and their precipitation daily time series were analyzed. Also, three extreme indices were calculated and their trends were analysed over the entire time period (1960-2100). The selected indices were: the heavy rainfall threshold (the 95th percentile of rainday amounts (mm/day), the greatest 5-day rainfall (greatest 5-day total rainfall (mm)), and the longest dry days (maximum number of consecutive dry days (days). It is to be noted that the first index is based on thresholds defined using percentile values rather than fixed values. This makes the pq95 index transferable in different regions with different climatic regimes. The greatest 5-day rainfall amount is an important measure of extreme from the point of view of flooding in a region.

The first results of the study showed that heavy rainfall conditions will become more intense in the future mainly in the western part of the Balkan Peninsula. On the other had, the model "predicted" a general shift to drier conditions. In the case of the summer period a persisting absence of rainfall is expected in the future, since the length of dry spells approaches 90 days. Finally, extreme precipitation tends to decrease during the warm part of the year by the end of the 21st century, while intense precipitation episodes should be more often expected in autumn.

In the last part of the study, the relationship between extreme indices of precipitation and the atmospheric circulation was analysed. More specifically, the North Sea-Caspian teleconnection index is identified as an upper level (500hPa) atmospheric teleconnection between grid points 0^o to 55^oN; 10^oE to 55^oN (North Sea) and 50^oE to 45^oN; 60^oE to 45^oN (northern Caspian). During the negative phase of the NCP index there is an increased southwesterly anomaly circulation towards the study area, while during its positive phase there is an increased northeasterly circulation towards the Balkans. After calculating the daily calendar of the index, until the end of the 21st century, the statistical relationship between the

teleconnection index and the extreme rainfall was estimated for both the present time and future period.

The impact of landslides to the landscape evolution in the island of Andros

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This paper presents the impact of landslide phenomena to the landscape evolution of Andros Island. The morphology of Andros Island,was highly affected by tectonism (extensional deformation) in combination with the highly weathered metamorphic rocks of the Cycladic metamorphic massif. These are the two main reasons for the landslide phenomena in the island. The landslides on the island have a specific distribution following the slopes with high angles. These are located on high altitude areas very close to the major tectonic structures, or on the side slopes of highly eroded valleys due to the running water action. The results of the fieldwork and the terrain analysis showed that the landslides are divided into three distinctive groups, corresponding to their scale and their formation conditions. The oldest (1st) group of landslides affects very large parts of mountain slopes that have been moved downwards due to driving forces connected with the tectonic evolution of the area and the deformation faults, but also with the action of weathering and erosion processes. The geological formation of the slope parts is responsible for the generation of the intermediate (2nd) group of landslides. All landslides included in this group of mass movements are manifested in sites which consist of schists with marble intercalations and marble bodies. These formations are intensively fractured. The youngest (3rd) group includes all the synchronous landside phenomena. These landslide phenomena, which affect linear technical works and urban areas, are connected with the geomorphologic conditions, climatic regime as well as human activities, and are presented in many places over the island, mainly during of high precipitation periods.

Application of geological mapping and teledetection techniques for identification of olistostromes and olistoliths in the Outer Carpathians

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Olistostromes formed in the Outer North Carpathians during different stages of the development of flysch basins are quite frequent. They are known from the Cretaceous, Paleogene and Miocene flysch deposits of the main tectonic units (the Pieniny Klippen Belt, the Magura, Dukla, Fore-Magura, Silesian, Subsilesian and Skole nappes and from the Miocene molasse of the Carpathian Foredeep). Detailed field mapping enabled the identification of new localities with olistostromes and large olistoliths. In the inner zones of the Silesian Nappe they were found within the Lower Cretaceous deposits of the Hradište Formation in Żywiec, the Upper Cretaceous Godula Formation in the Silesian Beskid Mts., Late Cretaceous and Middle Eocene in Rożnów Lake surroundings. Olistostromes with large olistoliths, or occasionally olistoplaques, within and above the Oligocene-Early Miocene Krosno Beds occur near Gorlice and Skrzydlna. The Paleogene and Early Miocene olistostromes have been found in the Subsilesian Nappe and olistostromes composed of