

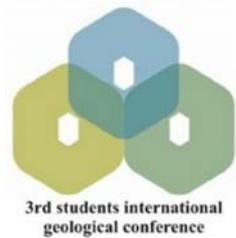
3rd Students International Geological Conference



ABSTRACTS



Lviv, Ukraine
April 27-30, 2012



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Lviv 2012

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The book contains the abstracts of presentation from the Students International Geological Conference devoted to the regional geology of Europe and related topics. — 3rd Students' International Geological Conference (April 27–30, 2012, Lviv, Ukraine).

The presentation are devoted to actual problems of recent regional geology and show the opinion expressed by representatives of researches from number of schools, universities and institutes from all around Europe.

Книга вміщує тези доповідей з 3-ї Міжнародної студентської геологічної конференції, присвячені регіональній геології Європи та спорідненим темам. — 3-я Міжнародна студентська геологічна конференція (квітень 27–30, 2012, Львів, Україна).

Доповіді висвітлюють актуальні проблеми регіональної геології та демонструють погляди, висловлені представниками різних шкіл, університетів та інститутів з усієї Європи.

This collection presents abstracts of the Third Students International Geological Conference. Researches concern many aspects of modern geology. Among other it is necessary to outline the problem which applies to useful minerals prospecting. First of all this refer to energetic resources. Exploration of shale gas is topical in Europe and elsewhere now. The latest techniques and technologies are used here. Widespread usage of methods of geophysical sounding are also a common method.

In a number of reports various aspects of using GIS in geology and environmental protection are presented. Today geology benefits from the latest achievements of information technology. In particular, this applies to geographic information systems and their usage at all stages of geological research ranging from data collection to their processing and presentation in various forms.

Modern geology is at the stage of development, which should provide not only the exploration of useful components, but their rational usage and recycling. Therefore, many abstracts concern problems of environmental protection and rational usage of natural resources.

Traditionally, students pay much attention to the study of mineralogy and petrography of sedimentary and igneous formations of different ages.

Another "classical" branch of geology, i.e. structural geology is also enjoying the development. Usage of new methods and approaches provide a new information flow which scrutinizes progressive investigation of various crust structural elements. This is shown in a series of reports.

Both small territories and large basins located on different continents are concerned by students from the geographical point of view.

Editorial Board

В цьому збірнику представлені доповіді учасників 3-ї Міжнародної студентської геологічної конференції. Дослідження стосуються багатьох аспектів сучасної геології. Серед інших необхідно відмітити проблеми пов'язані з пошуками корисних копалин. Насамперед це стосується енергетичних ресурсів. На передньому плані в Європі та в інших частинах світу стоять пошуки покладів сланцевого газу. При цьому використовують новітні методи та технології. Широко застосовують методи геофізичних зондувань.

В низці доповідей представлені різноманітні аспекти використання ГІС технологій в геології та охороні довкілля. В першу чергу це стосується геоінформаційних систем, та їх використання на всіх стадіях геологічних досліджень — від збору даних, їх опрацювання та представлення в тих чи інших формах.

Сучасна геологія знаходиться на такому етапі розвитку, що повинна забезпечити не тільки виявлення корисних компонентів, але й їх раціональне використання, та утилізацію відходів цього використання. Тому значна частина доповідей стосується проблем охорони довкілля та раціональному використанню природних ресурсів.

Традиційно багато уваги студенти приділяють вивченню мінералогії, петрографії як осадових так і магматичних різновікових утворень.

Інша "класична" галузь геології структурна геологія також переживає підйом. Використання нових методів та підходів дає новий потік інформації про розвиток різноманітних структурних елементів земної кори. Це продемонстровано в серії доповідей.

В географічному охопленні студентами розглядаються як невеликі території, так і цілі басейни, що розміщені на різних континентах.

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Environmental Studies

The Geoecological State Analysis of Brody District

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Nowadays the problem of the environment geoecological degradation has been increasing. Intensive development of industry and agriculture, irrational and uncontrolled use of natural resources, increase anthropogenic pressure on the environment cause adverse changes of its state. This in turn affects the social and demographic processes in society, health, general stress geoecological situation territory.

The object of investigation is a territory Brody district, subject — geoecological state components of the environment. Since the absence of large industrial plants and the dominant effect of agriculture attention is paid to its impact on the geosystems. This territory belongs to the small Polisia. Unique habitats of plant species formed on this territory. 13 nature-protective areas are the ekostabilizing factor in this area.

Using ArcGis software by ESRI in the research process, were designed and created the geodata base and cartographic models, that formed the basis for Brody district geoecological analysis. During research it was used stock, cartographic, statistical materials of the State department of natural environment, Main department of statistics, land resource, water management, forest management, sanitary and epidemiological service.

Investigated territory modern geosystem is the complex of natural and anthropogenic components, their correlation indicates stability or instability of geoecological state. A method that takes quantitative and qualitative characteristics of the environment components into account is used to determine the environmental stability of the territory and the level of anthropogenic pressure. This is determined by calculating the coefficients — K_{ee} and K_{an} , that characterize the impact of economic activity magnitude. The environmental properties coefficients of different types of land were considered in the first case, in the second — scoring the degree of anthropogenic load a particular type of land on the investigated area.

The coefficient of ecological stability areas (CES) is calculated as:

$$K_{ee} = \frac{\sum_{i=1}^n S_i K_i}{\sum_{i=1}^n S_i}$$

where K_i — ratio of environmental characteristics and land-type, S_i — area of landuse and species, n — number of indicators.

Coefficient of anthropogenic pressure on land resources K_{an} define it by the formula:

$$K_{an} = \frac{\sum_{i=1}^n S_i B_i}{\sum_{i=1}^n S_i}$$