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# UNIVERSITÀ DEGLI STUDI DI PALERMO

## FACOLTÀ DI SCIENZE MM.FF.NN.



Ministero dell'Istruzione  
dell'Università e della Ricerca

### ITALIAN-RUSSIAN SCHOOL OF HIGH EDUCATION IN ECOLOGICAL, ENVIRONMENTAL, AND NATURAL SCIENCES



Istituto Italo-Russo  
di Formazione e Ricerche Ecologiche



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Comune di Geraci Siculo

Geraci Siculo: Ex Convent of Capuchin Friars, Centre of the school



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## ENVIRONMENT BIOMONITORING AND EVALUATION OF ITS QUALITY BY ECOLOGICAL INDEXES



Provincia Regionale di Palermo



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## **Tehnogenic influence on the perm karst territories**

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Ecological problems have been the problem number one since the middle of the 20<sup>th</sup> century. And the world society has been researching them more seriously since the middle of the 1960s.

Perm region is characterized by a complicated cycle of ecological problems. Perm region is the region of high integral risk of natural and technogenic damages opportunity and catastrophes with ecological consequences.

Allocation of technogenic sources of changes of the geological environment on the territory of Perm region depends on its geological construction, in particular, the availability of natural resources (coal, oil, gas, building rocks and mineral waters), water and forest resources, geographical position, history of its researching and the economical development. The territories of Kisel coal-field, Volga-Ural oil area and Kama salt field are the areas of intensive technogenic influence on geological environment.

Slowing down the karst process is the result of engineer-geological actions on karst rocks. The reaction of the environment on technogenic actions depends on the type of karst: sulfate, carbonate or salt. As a result of natural resources output technogenic soils are collected on the earth surface and then technogenic karst develops in them. Discharging of the soluble components out of such soils pollutes the environment.

The aim of this work is researching the role of technogenic influence on the activation of the Perm region karst. The following problems have been studied: 1. characterizing the Perm region karst; 2. characterizing the technogenic influence on karst territories; 3. researching the main peculiarities and laws of the technogenic influence on Perm karst territories.

Technogenic influence on geological environment deals with the extraction of natural resources, building and exploitation of ground and underground constructions, premeditated and unpremeditated changes of geological processes and rocks properties, as well as with physical, chemical and biological pollution.

Planning the works in karst region must be based on the forecast of the development of the karst process. There must be also provided the actions preventing the activation of karst processes.