



12<sup>th</sup>

# Asian Regional Conference of IAEG

Abstracts



Sept. 23<sup>th</sup> - 27<sup>th</sup> 2019

Jeju, Republic of Korea



대한지질공학회  
The Korean Society of Engineering Geology

PO-0154

## Karst Sinkholes and Subsidence: the Problem of Predicting Diameters

Sergey Shcherbakov<sup>1</sup>

<sup>1</sup>Perm State University, Russia

\*Corresponding author: greyvr@gmail.com

Today's methods of direct investigations of soil massifs (drilling, geophysics) in conditions of covered karst are not allow with high precision determine age and mechanism of establishment of surface karst forms and also places of occurrence and dimensions of underground karst features (cavities, fractured zones). Such limitations in the ways of studying surface and subsurface karst forms essentially affects on the quality of prognosis of sizes of sinkholes and subsidence inherent at the moment of their occurrence. For increasing of authenticity of such prognosis should be simultaneously used different methods of estimations, based on both an investigation of dimensions of observed surface karst forms in situ and on studying of soil massifs behavior above karst cavity.

The present practice of karst prognosis in different degrees applies next methods for estimation of sizes of surface deformations: a) expert method; b) probabilistic method; c) deterministic method; d) method of physical modeling. All of mentioned above methods has their own advantages and disadvantages and need to be fully integrated each other during karst deformations prognosis.

In combination of prognostic methods should be maximum concerned natural and technogene conditions of karst development, such as: a) surficial karst distribution within researched territory; b) tectonic structures, geological and hydrogeological conditions of site with engineering zoning of geological section; c) project stage and level of responsibility of construction object. In the research has been offered the block-scheme of optimal integration of different methods for solution of engineering-karstological tasks in construction.

**Keywords:** Karst, Karst hazard, Sinkhole, Subsidence, Diameter



대한지질공학회  
The Korean Society of Engineering Geology