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Analysis of gold mineralization in Southern Uzbekistan with using of computer technologiesJuliev M.K.¹, Khoshjanova K.K.¹, Sadikova L.R.¹¹Institute of Geology and Geophysics, Academy of Sciences of Uzbekistan, Tashkent 100041, Uzbekistan Email: geolog.uz@gmail.com

KEY WORDS: Southern Uzbekistan, computer technologies, gold objects.

ABSTRACT: Special feature of last decade is active implementation of computer technologies in geologic branch of Uzbekistan. Efficiency of geologic researches in many respects depends on degree of use of these technologies.

The created base of the geologic cartographical information of Southern Uzbekistan is the first operation in this area. Following maps have been selected for electronic base of maps of Southern Uzbekistan.

- Geophysical map.
- Geological-Mineragenical map.
- Geodynamic map.
- Geochemical maps.
- Map of intrusive complexes of Gissar region.
- Map of geologic formations .

Also has been used statistical metallogenic analysis which founder is academician F.A.Usmanov. It represents the information technology including system of computer programs "Geoanalysis" and base of electronic geologic, geophysical and geochemical maps of investigated territory.

System programs are developed so that it was possible to form various variants for a decision of statistical metallogenic analysis problems and quantitative forecasting of ore deposits. Depending on the initial given and solved problems, the technology can be applied to regional, local and detailed forecasting.

By present time are developed more than 30 programs of statistical metallogenic analysis problems and forecasting ore-bearing territories. Programs are made in language MapBasic in GIS MapInfo.

In this work are used 3 modules of this system.

1. Program Zone_map for definition of laws of spatial distribution of ore objects. For program realization was used the method of a sliding window similar to method widely applied in geophysics of averaging of the field.
2. The program «Relation». The program is intended for a quantitative estimation of the importance of factors of the localization of mineralization by indications presented on maps. For this purpose carried out calculations of frequencies of indications, density of placing of objects, factor of spatial dependence and criterion for estimation of its importance by two tabular maps of separate indications.
3. The program «Perspective_map» for detecting of forecast-perspective areas. Idea of the method in the following: Each elementary area of the investigated territory (it is possible a point, a square etc.) is estimated on presence of the factors of localization detected at the previous stage of mineralization. The conformity factor shows a measure of perspectivity of an elementary site. Finally turn out areas with a different estimation of their perspective. Then the areas which have received high values are delineated and formed forecast-perspective area.

As a result of the statistical analysis have been received following results:

Gold objects of Southern Uzbekistan are divided into 3 classes:

-Gold-silver.

-Gold-sulphidic.

-Gold-quartz.

Gold-silver type is presented by silver-gold formation. The greatest value of the factor of spatial relation ($D=0.7$) with silver-gold formation was received by suites: Kayrak, Vahshivar and Siomin.

Gold-sulphidic type is represented by quartz-arsenic-gold formation which spatially associated with Kararag suite. Karatag suite located in the Gissar zone and a zone of the South Gissar hypogenic split.

Gold-quartz type is developed exclusively in the Baysun zone and spatially associated with occurrences of silver-gold formation and the extension areas of Vahshivar suite and with its subvolcanic root parts, but occupy lower stratigraphic datum.