GEOSCAN - SOFTWARE GEOCHEMICAL MAPPING

GINZBURG, L.N and BURENKOV E.K. Institute of Mineralogy, Geochemistry and Crystal Chemistry of Rare Elements, Moscow, Russia.

The process of geochemical mapping provides construction of a series of maps. The authors developed a computer system Geoscan which allows processing of non-uniform geochemical information and creating of various maps. Relevant system algorithms are based on the notions on spatial behavior of heuristic multidimensional functions, which consider the geochemical nature of the data. This feature enables to reveal the structure of a geochemical field. Distinctive feature of the system is that it does not require any additional geological information. Geoscan employs the discrete methods of group acceptance of the decisions combined with optimum classification methods. Thus assisting in the solution of one of the key problems of geochemical mapping: revealing of geochemical specialization of geological objects. The given mode characterizes geochemically geological divisions revealed and allows to solve problems of classification, partition and correlation of geological units. The system allows the researcher to obtain and to analyze an electronic geochemical model of the geological phenomena, however, it does not force the decision, but invites him to manage the design the geochemical models and maps. Another option allows to obtain a diversity of mono-element maps. The third mode is due to process multidimensional data and maps. Along with map design, their legends are automatically created. The system creates maps in formats compatible to existing GIS, that makes it an essential tool geochemical mapping, international activities included.