

# **The development of the Mineral Resources Assessment and Analysis System(MORPAS)**

**Hu Guangdao, co-author, Li Zhenhua, Ma Hongchao, Caoyu, China University of Geosciences, Wuhan, China**

MORPAS, which is based on the techniques of GIS, RS, ES and data warehouse, is an application software platform suitable for mineral resources assessment and information management.

The following aspects have been studied exploratorily in the MORPARS:

1. Basic database manages the geological database, geophysical database, geochemical database, remotely sensed database, deposits(mineral occurrences) database and field projects database uniformly, solving the problem of standardization and normalization of various data sets.
2. Data ware house technique is used to establish the functions of indexing, searching, integrating, transforming, synthesizing and reconstructing of spatial database and common database. It also provides analysis-oriented multi-dimensional data set.
3. Specific usage models for spatial analysis have been developed, as well as the model for geological background and geological anomaly analysis, which is suitable for studying geological variables quantitatively.
4. Based on ANN and AI techniques, data mining model realizes the function of extracting potential patterns automatically from multi-dimensional data sets.

As an example on how the MORPAS performs, a case study of mineral resources assessment and analysis for the Sanjiang Ore-forming Zone, Yunnan China, is presented in the last part of the paper.