

Publication of the GIS-project - Geochemistry and ore deposit intraplate magmatism from the Atlantic ocean by the WWW.

*Ryakhovsky V. M.,** Asavin A. M*, Chesalova H. I***
** Vernadsky Institute of Geochemistry and Analytical Chemistry,*
117945, Moscow, Kosigina str

E – mail: alex@geokhi.ru

*** Vernadsky Geological State Museum Moscow, Moshovai str. 2. 11*

E – mail: lena@sgm.ru

Abstract

Our GIS project start from 2003 year. Now we do first steps to published one from INTERNET. We combine geological information about magmatism of the Atlantic ocean as layers of geophysical and geochemical maps.

GIS project

GIS-project -"Geochemistry and ore potential of intraplate magmatism from Atlantic Ocean". This project contains from following traditional layers:

1. Geological map, with main tectonic fracture
2. altimetry and bathymetric map
3. thickness of the sedimentary layers
4. Mocho boundary and the thickness of the oceanic crust.
5. Thermal stream map
6. Gravity field with Faiy projection
7. Earthquakes centers and parameters of the events

Also we build special geochemical maps of the composition of the intraplate volcanic rocks.

We use database PROBA which contains about 500 measurements of intraplate magmatism composition, age (from seamounts and island magmatism) and trace element characteristic.

We divide two set of the data one there is a primary magmas composition and isotopic feature and the other is differentiates volcanic melts [1,2]. We try to found by this classification distinction between initial regional composition of the mantle and from the primary melts. We research the chemical heterogeneity of the oceanic mantle. There are several covers of the trace element concentration from the rock and ratios of the trace elements (Zr/Hf, Zr/Nb, Th/U etc). There is petrochemical typification of the primary melts by the circle-diagrams in the points of magmatism locality.

The ore potential of the oceanic region shows as maps of Fe-Mn nodules on the bottom of the ocean and crust on the seamounts. The geochemistry of that deposit shows from the GIS-project as set of maps of the trace elements concentration and common potential level of the Fe-Mn crust locality. This covers based on our database of the Fe-Mn crust (about 17000 counts).

WWW publication GIS project

GIS- The common aim of GIS project consists from the all-round research of the spatial relationship between geochemical features of the magmatism and the geophysical fields into the Earth oceanic region [3]. There is our GIS-project some kind of instrument for investigation geochemistry of the oceanic magmatism.

At the 2004 year we start published GIS-project from the INTERNET. Now we used the open GIS server software for shape cover of the main map content GIS-project. Also we planed connect GIS server with ORACLE server with database PROBA and database from the geochemistry of the Fe-Mn crust. Also we planed add into the content high scale maps (about 1:200000- 500000) of the intraplate magmatism locality – geological map of the oceanic island, high scale bathymetric map of the seamounts. As sample of this work we published geological map of the Tenerife island - <http://dimetra.wdcb.ru/tenerif/index.html#>. The data are supported in a Web Mapping Service, the MapServer University of Minnesota freeware, using the infrastructure developed under GIS project [4].

References

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