



The distribution of the major elements in the stream sediments from the Jijia River basin

Claudia Pintilei¹

¹ "Al. I. Cuza" University of Iași, Faculty of Geography and Geology, Department of Geology, 20A Carol I Blv., 700505 Iași, Romania

Abstract

The aims of the present study are to assess the normal variation limits of nine major chemical elements from the stream sediments of the Jijia river basin, as well as to explain the presence of any anomalous values. Statistical interpretation revealed that Al_2O_3 , MgO , Na_2O and K_2O are normally distributed in the investigated sediments, while the Fe_2O_3 contents follow a log-normal distribution. The rest of the components (SiO_2 , TiO_2 , MnO and CaO) do not follow either normal or log-normal distributions, exhibiting anomalous values. The median values for the contents of most of the major components in the stream sediments from the Jijia river basin are close to both European and Romanian standards for stream sediments. The anomalous values recorded for certain components are determined either by lithological variations (in the case of SiO_2), or by the specific fauna of the Sarmatian deposits (in the case of CaO). The geochemical background, calculated through several methods, has indicated the following values for the geochemical threshold: 71.06% SiO_2 , 0.94% TiO_2 , 19.15% Al_2O_3 , 7.29% Fe_2O_3 , 0.165% MnO , 2.87% MgO , 10.77% CaO , 2.39% Na_2O , and 3.54% K_2O .

Copyright © 2012 Published by Ed. Univ. „Al. I. Cuza” Iași. All rights reserved.

Keywords: stream sediment, major elements, geochemical background, threshold value, Jijia basin, Moldavian Plain.
