



A methodological approach to estimate the geogenic contribution in soils potentially polluted by trace elements

Emilio Galán, Isabel González, Antonio Romero, and Patricia Aparicio
University of Seville, Spain (igonza@us.es, +34954557140)

The geochemical baseline of soils in an area includes the natural content (background) and the anthropogenic impact. The determination of background (geogenic) values contribution in a potentially polluted soil is very important to defining the contamination extension, in particular in areas of geological complexity and long-term economic development, where mining and industry have been traditional activities, and soils show both geogenic and anthropogenic contributions.

Some approaches have been proposed for the estimation of the anthropogenic input versus the background, (i.e. enrichment factors or the geoaccumulation index). In this paper we present a more robust approach based on the comparison among the trace element contents in soils potentially polluted and the reference (target) and threshold values calculated for the same geotectonic unit (regional geochemical baseline). A second stage establishes to calculate the reference and threshold values for the natural environment of the potentially polluted site with similar lithological characteristics. The working plan to be followed for this approach is presented.