

This paper describes the mapping of gold content in the surroundings of abandoned gold mines located in central Portugal. In 1988, 376 samples were collected and analyzed for 22 elements. Gold (Au) was measured only inside the gold mines and its value was predicted at other locations using linear regression ($R^2 = 0.46$) and four metals (Fe, As, Mn and W) which are known to be mostly associated with the local gold's paragenesis. One hundred realizations of the spatial distribution of gold content were generated using sequential Gaussian simulation. Each simulated map then underwent a local cluster analysis to identify areas of significantly low or high values. The one hundred classified maps were processed to derive the most likely classification of each simulated node and the associated likelihood. The distribution of the hot-spots and cold-spots shows a clear enrichment in Au along the Erges River.