

# Determining the most optimal interpolation algorithm for groundwater data analysis

**Authors:**

**Mohsen Hedarogle and  
Ebrahim Fataei**

**Institution:**

Department of  
Environmental Sciences,  
Ardabil Branch, Islamic  
Azad University, Ardabil,  
Iran.

**Corresponding author:**

**Ebrahim Fataei**

**ABSTRACT:**

Contamination of heavy metals in ground water wells need to be reviewed and determination of the spatial distribution of the emissions are inevitable. For this purpose, the use of geostatistical techniques are very practical. In this study, to examine the spatial distribution of emissions of heavy metals, chromium, cadmium and lead in drinking water wells in the rural area of Meshkinshahr in high water and low water periods, different geostatistical methods were used. In this research, eight different interpolation algorithms were used in GIS and the most efficient algorithm to select the least square error function and maps related to the spatial distribution of heavy metals were drawn. The results showed that Kriging algorithm is the most optimal interpolation algorithm for groundwater data.

**Keywords:**

Potable water, Heavy metals, Kriging algorithm, Meshkinshahr.