Abstract

In this study, the results of the environmental noise (RA) monitoring during the daytime period (LEQD) in El Poblado (14 samples) and Lalinde (2 samples) neighborhoods, within the urban area of Medellin city, are shown. This sampling was carried out during a 7-day period in July, 2008, and the information was assessed at the Geostatistics Center at the National University of Colombia (Centro de Geostadística de la Universidad Nacional de Colombia). The structural analysis for the environmental noise variable was based on the regionalization of 417 data taken in the urban area of the municipality of Medellin, for the project «Mapas acústicos y de concentración de monóxido de carbono de los municipios del área metropolitana del valle de Aburrá» («Acoustic and carbon monoxide concentration maps for the municipalities in the Aburrá valley metropolitan area»). The variographic structure was coupled to a cubic model with a range of influence of 780 meters and a real standard deviation of 4.45 dB (A), representing the 97% theoretical or statistical variance. Based on these results, the level of environmental noise (RA) was estimated between 65 and 69 dB(A), for El Poblado neighborhood using the Kriging Polygonal technique and with a relative error of 4%. These results lead to classify this noise level, geostatistically, as proved. On the other hand, The environmental noise level estimated for Lalinde neighborhood could range in an interval between 66 and 74 dB(A), with a relative error calculated on 38%, which falls into the category of possible environmental noise level. The maximum estimated environmental noise level classifies El Poblado neighborhood in the environmental noise related to a Sector C (law 0627/2006) which is allowed to areas for commercial use, such as shopping centers, shops, premises or similar facilities such as mechanical and industrial shops, sport and recreation centers, gyms, restaurants, bars, taverns, discotheques, bingo houses, and casinos.

Keywords

Environmental noise, geostatistics, Kriging Polygonal, monitoring.