Analysis of Urban Environmental Noise around the Rodriguez Ballón International Airport, Arequipa, Peru

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Abstract

Airport trafficking is an important source of noise pollution. The recent rise in the number of aircraft flights and the subsequent increase in emissions has been causing negative impacts, especially for residents living near an airport in populated cities. In this study, we measured the noise and pollution levels in the urban areas emitted during the landing-takeoff phase of flights at the Rodríguez Ballón International Airport (RBIA). The data were collected daily using the Larson Davis SoundExpert® LxT Sound Level Meter and covered the period from April to May 2022. The measurement locations were considered within the radius of 0.18 and 1.5 km around the tip of the nearest runway. Our results show that noise level varies with values of up to 85 dB, which exceeded the National Ambient Air Quality Standard limits. For the incoming flights, the average continuous sound pressure levels were 45 dB and 83 dB. The plane flypast noise for the taking-off aircraft was significantly higher than that of incoming aircraft. The present study showed significantly highly levels of noise with differences in taking off and landing at the RBIA and requires urgent actions to address the problem.

Keywords: Aircraft flights, noise pollution, airport