

Abstract In this research we investigate the environmental burden of disease in Canada. Particulate matter (PM_{2.5}) is the environmental risk factor of interest. We study its impact on mortalities from all causes, lung cancer and cardiopulmonary disease. The research focuses on years of life lost (YLL) as the health indicator to estimate burden of disease. An expression for the variance of YLL is developed and verified using a simulation study. We also investigate the methods used to estimate relative risks (RR) and population attributable fractions (PAFs). An application on a Canadian data set is given at the end and the results obtained are discussed and compared with studies conducted by the World Health Organization (WHO).