

Abstract

The thesis evaluates the long-term development of concentration of major air pollutants (sulphur dioxide, nitrogen oxides and particulate matter) at 17 air pollution monitoring stations. Chosen stations include automated monitoring as well as manual measuring stations and the locales cover the range from nature background stations (CR) to industrial and transport sites (in polluted areas of CR). The development of air pollution on the representative set of measurements is supplemented by the progress of pollution inventory of SO₂, NO_x and particulate matter from man-caused sources, and present state and development of pollution of precipitation and wet deposition in recent years. The pollution data was processed using monthly average concentrations by basic statistical methods of comparing multiple samples and time-series data analysis. Contemporary progress in recent years was considered in evaluation of air pollution, plus progress in the 90s characterised by pronounced changes and preceding period. The surveilled period is concerned mainly with problematics of SO₂, from the trend of growing concentrations, across slight decline, followed by rapid decline in the course of the 90s till the present, when the SO₂ moves gradually out of focus. The magnitude of decline depends on the locale pollution, same is true for SPM concentrations. The thesis evaluates the NO_x chiefly by comparison to pollution by SO₂ and discusses common and differing aspects of pollution. Insufficient data provided by manual programs for NO_x prevent evaluation. Considering the present scientific approach, the problematics of particulate matter is included and discussed only marginally from the point of view of mass concentration SPM and ongoing measurement PM₁₀ since the 90s.

All monitored indicators showed pronounced decline of emissions during the surveilled period (in whole country and regionally), as mirrored in concentrations. Region of northern Bohemia had highest emission concentrations in the past. In Ostrava-Karviná region, where maximal concentrations weren't that high, the indicators showed lower emission load and moderate decline in '80s and '90s. The Prague region differs from the previous two in source composition and source ratio (owing to the zone type). The period after the year 2000 does not show clear trends in monitored indicators in selected locales.