SEASONAL VARIABILITY AND LONG-TERM TRENDS OF PH IN PRECIPITATION ON THE BASE
STATION OF IMNE IN SZYMBARK IN THE YEARS 1999–2013

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Summary

This article presents an analysis of the dynamics and trends of the pH of precipitation in the period 1999–2013, taking into account the seasonal diversity of this parameter. The analysis was based on measurements of daily precipitation samples, collected at the Base Station of IMNE in Szymbark. Calculated values of annual and seasonal average of selected parameter, an analysis of trends in mean values: annual and seasonal. Based on the criteria Jansen et al. (1988) presents an analysis of the number/share of samples in different sections during many years. The mean seasonal pH for classes of daily precipitation totals. The average annual pH of precipitation on the IMNE Base Station at Szymbark in the years 1999–2013 closed in the range of 4.05 to 5.19. After 2007, is observed downward trend of the average annual values of pH, mainly due to the decrease in the average seasonal values during winter (see Fig. 8). This condition is caused primarily by the quality of the fuel material. According to the classification of Jansen et al. (1988) in the 15- year period occurred 7 annual average pH values in the class „slightly reduced" and 6 – in class „significantly reduced". A marked dichotomy between the „cooler" (early winter, winter and early spring) and „warmer" (spring, summer and autumn) part of the year: in the „cool" part of the year dominate samples of pH in „slightly-" or
„significantly reduced" classes, whereas „warm" part of the year – in the „normal" class. Seasonal pH trends in analyzed multi-year period, are multidirectional. Particularly worrying is the tendency to acidification of precipitation during the winter season, providing a negative impact on air quality and precipitation local emitters of pollutants (especially during the heating) and distant sources of pollution, located in the industrial areas of Slovakia and the inflow of air masses from the direction of NW.