

Automobile catalysts reduce emissions of CO, NO_x and CmHm from combustion engines. At the same time, the automotive catalysts produce emissions of platinum group elements (PGE). Automotive catalysts were designed especially on the basis of Pt and later became an important metal Pd. The main objective of this study is monitoring of distribution of metals Pt, Pd in the soils of municipal parks in two large cities Prague and Ostrava. Soils samples were taken from three depths levels (0-10, 10-20 and 20-30 cm) under crowns of vegetation and at the open site. Then followed docimastic separation into NiS and sample analysis using by ICP-MS.

The highest contents of Pt and Pd were determined in Prague in a open site at a depth of 0-10 cm - 159.5 ug/kg for Pt and 49.79 ug/kg for Pd at the Karlovo namesti. Several major road junctions which daily passes a large number of cars are located at this site. The maximum contents of PGE were much lower in the Ostrava then in Prague. The highest content of Pt (3.24 ug/kg) was measured at a depth of 0-10 cm under the crowns of vegetation at the Sad M. Horakove site. The highest content of Pd (0.91 ug/kg) was measured at a depth of 0-10 cm at the open site of the Komenske sady site. At some locations, the maximum PGE concentrations were observed in deeper parts of the profile. The maximum numbers of registered new vehicles equipped with automotive catalyst was in 1997. With assumption that new vehicles emit the highest amounts of PGE, over the years the PGE metals have migrated into the deeper parts of the soil profile.