TH112 Phospholipid fatty acid profiles as indicators of microbial community composition variations in soil by mixed heavy metal pollution M. Pukalchik, Lomonosov Moscow State University / Faculty of Soil Science; V. Terekhova, Institute of Ecology and Evolution RAS / Lab Ecologicall Soil Functions; E.V. Fedoseeva, Pirogov Russian National Research Medical University / Medicobiological faculty; K. Kydralieva; O. Yakimenko, Moscow State University / Soil Science Faculty; N. Verkhovtseva, Lomonosov Moscow State University (MSU) / Faculty of Soil Science. Primary information on heavily contaminated urban areas comes from many cities, however, chemical pollution assays are unable to evaluate the integrated biological effect, which shows a 'cocktail' of environmental factors acting simultaneously on biological systems. This study focuses at assessing of the microbial community structure of urban soils by phospholipid fatty acid analysis (PLFA). The soil samples(topsoil layer 0-20 cm depth) were taken at six sites located in the rural part of the cities of Kirov (Russia), differently polluted with heavy metals.The samples were measured for pH and the contents of organic C, total N, total P and total Pb, Ni, Cr and Cd. The structure of soil microbial communities was assessed using PLFA analysis (high-performance liquid chromatography–mass spectrometry method).The total PLFA content in control sample were found to be significantly higher than the polluted soil. The greatest indication value was given to an *Actinobacteria phylum*, their concentration decrease remarkably in the polluted samples, and anaerobes *Butyrivibrio* sp. and *Bifidobacterium* sp.were found as indicator of soils under relatively low soil pollution status.The microbial profileswere also indicated a selective enrichment of competent species (*Desulfovibrio* sp., *Bacteroides fragilis, Chlamydia* sp., *C. trachomatis*) in soil with high heavy metals contamination. Nonmetric multidimensional scaling plots of soil communities, showing the relative differences in control and pollution soils.Overall, our studycould promote to better understand how microbial community structure might adapt to heavy-metals stress. This study is supported by RSF (14-50-00029).