



137Cs in puddle sediments as timescale tracer in urban environment.

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Abstract: The (137)Cs-based chronological approach is suggested to identify the age of urban landscapes and the chronology of pollution of soil in residential areas. Three main pivot points constitute the basis of the chronological approach: beginning of the Atomic Era in 1945, the maximum input in 1963 and the Chernobyl accident in 1986. Application of (137)Cs as a timescale tracer was tested on the example of Ekaterinburg, a city in the Middle Urals region of Russia. The sampling of recent urban sediments of micro water bodies (puddles) was carried out in 210 locations in 2007-2010. The concentrations of Pb, Zn, Cu, Ni, Co, Mn and Fe, and activity concentrations of (137)Cs were measured. It was found that the (137)Cs concentrations in the puddle sediments correlated with the age of surrounding buildings determined by the year of construction. The correlations between the concentrations of metals and (137)Cs in the puddle sediments identified the major pollutants of the urban area, assessing their background concentrations and obtaining the average annual inputs.

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