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Investigation of the dynamics of erosion-accumulating processes using ¹³⁷Cs and excess ²¹⁰Pb as a marker of soil material displacement

Global ploughing up the areas, especially increased in last 2 century, lead to fundamental changing of the sediment load balance of flat territories, at first by repeatedly increasing erosion-accumulating processes. Using 137Cs as a marker of erosion-accumulating processes allow estimate of intensity these processes by the period from the middle of 50-th years, and in a number of cases (especially, in zones of Chernobyl contamination) by the more fractional periods. Atmospheric part of 210Pb (excess 210Pb) recently begin to conform as a marker for estimating of the rate of erosion-accumulating processes at the 100-120-years interval. At the same time here is a row methodical problems of radioplumbum method, in particular the excess 210Pb falling out spatial variability has been study insufficiently. Also there are other factors, bearing on the precision and reliability output quantity of rates of erosion-accumulating processes.
Application of these methods in the centre of Russian plane has showed: that arrangement of erosion and accumulation zones naturally changed along cultivated slopes in depend of their morphology; the dynamic of rate of sediment load accumulation in dry valley bottoms defines the intensity of repeated involved sediment load in transport at the expense of secondary erosion breakout development.

Primary authors: Mrs ZHUKOVA, Olga (Institute of global climate and ecology); Mr GOLOSOV, Valentin (Moscow state university)

Co-authors: Mr MARCELOV, Maksim (Moscow state university); Mr BELYAEV, Vladimir (Moscow state university)

Presenter: Mrs ZHUKOVA, Olga (Institute of global climate and ecology)

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