

ON THE FATE OF CHERNOBYL RADIONUCLIDES IN THE BLACK SEA SEDIMENTS

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The results of measurements of the concentrations of ^{137}Cs and ^{60}Co in the bottom sediments of the Black Sea indicate the inhomogeneity of their distribution both over the studied area and over the core depth. The intermittency of the layers with different concentration of radionuclides in the cores reflects the active horizontal movements and redistribution of sediments on the shelf and continental slope. The high degree of variability of the radionuclide activities observed on the shelf is probably due to the very heterogeneous nature of the sediment cover due to erosion and sediment redeposition. Some areas close to the shelf edge appear to be devoid of modern sediment. Maximum ^{137}Cs activities are found at a depth of 5-7 cm rather than at the sediment surface. As a result, the sedimentary layers, dated by the Chernobyl mark as seven years old, were found in the 5- 7-cm depth layer from the sediment surface. The maximum ^{137}Cs concentration in the surface sedimentary layer on the shelf was 42 mBq/g. ^{60}Co activities are exceptionally high in a sample collected in the mid-shelf at 68 m depth (1320 mBq/g) was possibly due to the presence of a hot particle from the Chernobyl accident. ^{60}Co was also present at some depth within several of the sediment cores collected on the shelf, whereas it was only detected at the surface of the sediment at the deeper sites. This presentation is an attempt to shed some light on the fate of Chernobyl radionuclides in the Black Sea sediments.