

ARTIFICIAL RADIONUCLIDES IN GLACIER SEDIMENTS (CRYOCONITES)

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On glacier surfaces sediments accumulate as so-called cryoconites in small depressions, ice pockets, crevasses, along ablation edges etc. Cryoconite is generally very fine-grained and therefore able to efficiently adsorb pollutants. In samples from glaciers we found ^{137}Cs activity concentrations between 255 and 136000 Bq/kg d.m. Contribution of global fallout ^{137}Cs is between 0 and 65 % of total ^{137}Cs . Further anthropogenic radionuclides detected are ^{90}Sr , $^{238,239,240}\text{Pu}$, ^{241}Am , ^{125}Sb , ^{154}Eu , ^{60}Co and $^{94\text{g}}\text{Nb}$. The composition of the radionuclides which can be attributed to Chernobyl appears to be the same as in original fallout, indicating that no chemical fractionation takes place between fallout and cryoconite. The spatial variability of radionuclide concentrations in cryoconites is very high. We discuss the possible role of cryoconites as present and future sources of radionuclide releases into the biosphere.