Atmospheric depositional fluxes of marine radiotracers ^{32}P, ^{33}P and ^{7}Be in Sevastopol region

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Short-lived cosmogenic radionuclides are used as tracers for the study of processes in the ocean and the atmosphere more than 60 years. The most interesting are radionuclides with half-lives of less than 100 days – ^{7}Be, ^{32}P, ^{33}P, ^{35}S allow to study processes occurring with high intensity. For modeling ^{32}P, ^{33}P and ^{7}Be in the ocean necessary to know their arrival with atmospheric deposition.

The depositional fluxes of ^{32}P, ^{33}P and ^{7}Be were studied in wet atmospheric deposition at Sevastopol region from February 2016 to December 2016. It was shown that the values of specific activity range from 1.26 to 5.18 dpm L^{-1} for ^{32}P and ^{33}P, and from 136 to 534 dpm L^{-1} for ^{7}Be. The average monthly flux of ^{32}P and ^{33}P is 12.51 and 13.95 dpm·m^2 day^{-1}, respectively, the average monthly ratio of $^{33}P/^{32}P$ is 1.1. The average monthly flux of ^{7}Be is 1395. Radiochemical yields values for ^{32}P and ^{33}P were determined by steps of preparation. Analyzed the possible reasons of decreasing in the chemical yield and errors in radiochemical preparation.

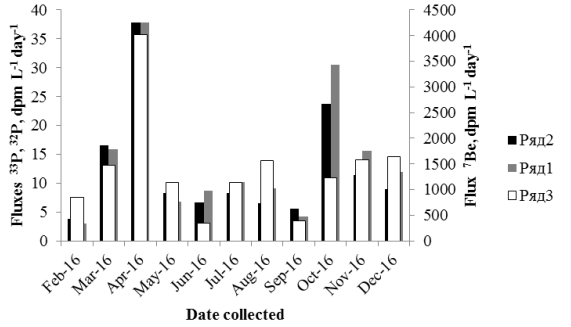

Fig. 1 Daily fluxes of ^{33}P, ^{32}P and ^{7}Be.

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