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Uncertainties of internal dose assessment for animals and plants due to non-homogeneously distributed radionuclides.
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The dose conversion coefficients (DCCs) for the assessment of internal absorbed dose rate in reference animals and plants have been generally calculated assuming a homogeneous distribution of radionuclides within the body. Realistic scenarios of internal exposure must account for some radionuclides which tend to concentrate in specific organs or tissues. To study the effect of such inhomogeneous distributions, internal DCCs have been calculated assuming both a central and an eccentric point source. The analysis of the results showed that uncertainties of the whole body DCC due to non-homogeneous radionuclide distribution are less than 30% for photons and electrons for all considered organisms. For electrons, the uncertainties are negligible below certain energies, dependent on the size of the organisms. Additionally, the organ doses due to the accumulation of the radionuclide in an organ are also described and organ/whole body doses ratios are estimated.

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