

MODELLING ACCIDENTAL RELEASES OF CARBON 14 IN THE ENVIRONMENT: APPLICATION AS AN EXCEL SPREADSHEET

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An application as an Excel spreadsheet of the simplified modelling approach of carbon 14 transfer in the environment developed by Tamponnet (2002) is presented. Based on the use of growth models of biological systems (plants, animals, etc.), the one-pool model (organic carbon) that was developed estimates the concentration of carbon 14 within the different compartments of the food chain and *in fine* the dose to man by ingestion in the case of a chronic or accidental release of carbon 14 in a river or the atmosphere. Data and knowledge have been implemented on Excel using the object-oriented programming language VisualBasic (Microsoft Visual Basic 6.0). The structure of the conceptual model and the Excel sheet are first briefly exposed. A numerical application of the model under a scenario of an accidental release of carbon 14 in the atmosphere is then presented. Simulation results and perspectives are discussed.