APPLICATION OF PARAMETER UNCERTAINTY ANALYSIS
TO THE ACCUMULATION OF Cs-137 IN FISH

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ABSTRACT

A metabolic model was used to predict the accumulation of ^{137}Cs in plaice (Pleuronectes platessa L.). Model verification was executed using published results on the accumulation of ^{137}Cs from both from in situ measurements and from experimental setups. Uncertainty analysis was performed in order to determine the contribution from the separate model parameters to the total uncertainty for both the separate exposure pathways and for the body burden of ^{137}Cs in fish. Generally, the metabolic regulation of ^{137}Cs in the gills creates a large variation in the final outcome, i.e. the concentration of ^{137}Cs in the fish. The model assumption regarding the uptake from water is also loosely supported, and priority should be given the study of this mechanism. The next most important parameters contributing to the variation in the body burden are the concentration of ^{137}Cs in the food, and the exponent relating metabolism to body weight.