

## Radiocesium distributions and dynamics in the Fukushima forest ecosystems

VASYL YOSCHENKO<sup>1\*</sup>, ALEXEI KONOPLEV<sup>1</sup>,  
TSUGIKO TAKASE<sup>1</sup>, KENJI NANBA<sup>1</sup>, YUICHI  
ONDA<sup>2</sup>, MARK ZHELEZNYAK<sup>1</sup>, SERGII KIVVA<sup>3</sup>

<sup>1</sup> Institute of Environmental Radioactivity,  
Fukushima University, Japan,  
r705@ipc.fukushima-u.ac.jp

<sup>2</sup> Center for Research in Isotopes and Environmental  
Dynamics, University of Tsukuba, Japan,  
onda@geoenv.tsukuba.ac.jp

<sup>3</sup> Institute of Mathematical Machines and Systems,  
Kyiv, Ukraine, skivva@gmail.com

Up to 2/3 of the most contaminated territory in Fukushima prefecture is covered with forests, and understanding of the radiocesium behavior in the forest ecosystems is crucial for evaluation of the accident impacts and for planning and implementation of the measures aimed at revitalization of this territory.

At the early stage after the accident, foliar interception of radiocesium and its removal from tree canopies with litterfall and precipitations were the key processes governing radiocesium redistribution in Fukushima forests. However, at the later stages the roles of other processes, such as root uptake to biomass and migration in soil profile will increase. For example, in 2014-2015 we observed significant redistribution of radiocesium in soil profile in the typical Japanese Cedar forest (Fig. 1) and changes of the radiocesium activity concentrations in the biomass compartments.

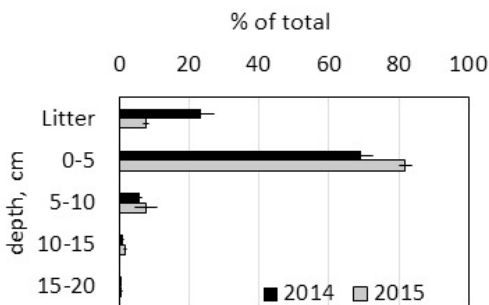


Figure 1. Radiocesium distribution in the soil profile (Yamakiya distr., Kawamata town).

We will present the observed dynamics of the radiocesium distributions in the typical Fukushima forests and numerical values of the biogenic fluxes and parameters governing its redistribution (infiltration rates,  $K_d$ ).