

## **Tracking the origin and dispersion of contaminated sediments transported by rivers draining the Fukushima radioactive contaminant plume**

**HUGO LEPAGE<sup>1</sup>, OLIVIER EVRARD<sup>1</sup>, YUICHI ONDA<sup>2</sup>,  
CAROLINE CHARTIN<sup>1</sup>, IRENE LEFEVRE<sup>1</sup>, AYRAULT SOPHIE<sup>1</sup> &  
PHILIPPE BONTE<sup>1</sup>**

*1 Laboratoire des Sciences du Climat et de l'Environnement (CEA, CNRS, UVSQ), F-91198 Gif-sur-Yvette France*

[hugo.lepage@lsc.ipsl.fr](mailto:hugo.lepage@lsc.ipsl.fr)

*2 Center for Research in Isotopes and Environmental Dynamics (CRIED), Tsukuba University, Tsukuba, Japan*

**Abstract** This study was conducted in several catchments draining the main Fukushima Dai-ichi Power Plant contaminant plume in Fukushima prefecture, Japan. We collected soils and sediment drape deposits ( $n = 128$ ) and investigated the variation in  $^{137}\text{Cs}$  enrichment during five sampling campaigns, conducted every six months, which typically occurred after intense erosive events such as typhoons and snowmelt. We show that upstream contaminated soils are eroded during summer typhoons (June–October) before being exported during the spring snowmelt (March–April). However, this seasonal cycle of sediment dispersion is further complicated by the occurrence of dam releases that may discharge large amounts of contaminants to the coastal plains during the coming years.

**Key words** erosion; sediment; soil; Fukushima; radio-caesium; enrichment factor