



## Effects of stemflow on infiltration flux of rainwater and dissolved Cs-137 to forest soil

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Stemflow takes important role on the hydrological and chemical cycling in the rhizosphere because it brings intensive rainwater input to forest soil and enhances downward infiltration of rainwater along tree root network to deep soil horizon. However, there are few studies on the effects of stemflow in rainwater infiltration mechanisms by collecting of soil water. In this study, stemflow and soil water near the tree roots (Rd : root downslope) and far from the trunk (Bt : between trees) are collected from a cedar forest in Namie Town, Fukushima Prefecture, Japan. Samples were collected from June 24 to December 11, 2019 with a total precipitation of 1100 mm during the period. Water volume and dissolved  $^{137}\text{Cs}$  concentration driven from the Fukushima Dai-ichi Nuclear Power Plant accident were measured. As a result, Rd which is located in neighbor of the trunk showed greater water infiltration flux and high dissolved  $^{137}\text{Cs}$  concentration. The average amount of infiltration water which was normalized for open rainfall depth during the whole sampling period was 1.4 times and 3.0 times larger at 5 cm and 20 cm depth for the Rd than the Bt, the average dissolved  $^{137}\text{Cs}$  concentration was 1.3 times and 1.7 times larger at 5 cm and 20 cm depth, respectively. This suggests that infiltration water flux and dissolved  $^{137}\text{Cs}$  concentration can be increased due to contribution of stemflow input at the base of tree trunk. To determine the role of stemflow on rainwater infiltration flux and the concentration of dissolved elements in the rhizosphere, further analysis is required to clarify detailed infiltration mechanisms by using multiple tracer techniques such as stable isotopic composition of water and by collecting root oriented preferential flow.