



## **Quantifying suspended sediment yield with fingerprinting technique in coastal catchments**

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The suspended sediment load transported by a river will commonly represent a mixture of sediment delivered from different locations and from various source types within the contributing catchment. Sediment yield of catchment is well known to depend on dominant geology underlying in the catchment, but the variation in sediment yield has rarely been quantified. The objective of this study was to quantify the suspended sediment yield of various lithological area within catchment. To achieve the objective, the fingerprinting was conducted using natural radionuclide tracers across a couple of adjacent coastal catchments, the Saru River and the Mukawa River in Hokkaido, northern Japan. Fingerprinting technique showed that the suspended sediment was mainly originated from sedimentary rock and metamorphic rock, while coastal sand was mainly originated from plutonic rock and melange matrix of accretionary complex. Suspended sediment yield was quantified for each lithological source group with fingerprinting technique and hydrological observation, showing the highest in the metamorphic rock area, where the landslide scar densely distributes. These results suggest that mass movement and weathering features depending on lithology can control the contribution of source to suspended sediment and its particle size from mountain to coastal area.