



Development of Fingerprinting Method in Sediment Source Studies

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Sediment source study is valuable for watershed sediment budget, sediment control in channels, soil erosion model validation and benefits evaluation of soil and water conservation. As one of the methods to make clear the sediment sources, fingerprinting has been proven effective, and hence has been adopted in different countries over the world. This paper briefly introduced the fingerprinting method in models, diagnostic sediment properties, applied regions, spatial and temporal scales, and classification of sediment source types. Combining with environmental radionuclides as the time makers (such as ^{137}Cs and ^{210}Pb), the sediment source history has been possible by virtue of this method. However, some uncertainties are waiting for the confirmative answers while introducing fingerprinting technique to sediment related studies: the efficient sampling strategies through linking sediment source and fingerprint properties need to be clearer, the spatial scale links (up-scaling and down-scaling) should be provided with detailed methods, the model calibration is necessary to be updated to improve the estimated precision.

(This paper is a contribution to the project of National Natural Science Foundation of China (No. 41501299), the non-profit project of Ministry of Water Resources of China (No. 201501045), and the project of Youth Scientific Research of China Institute of Water Resources and Hydropower Research (Using fingerprinting technique to study sediment source in a typical small watershed of black soil region in northeast China))