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## CHARACTERISTIC OF ROAD DEPOSITED SEDIMENTS ON THE HIGHWAY OF HUNAN, CHINA

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### Abstract

This paper aims to analyze the characteristic of Road deposited sediment (RDS) using West Chang Tan highway, Hunan, China as a study site. RDS samples were collected at five representative highway sites and the particle size distribution was generally less than 150 $\mu$ m. Particles with the grain size (<150 $\mu$ m) had high metal concentrations among all sampling sites (unit: mg/kg): Cu 74-178, Zn 309-2737, Pb 601-1160, Cd 9.8-44.5. There is significant spatial variability between the sediments' metal content and sampling site, the variance coefficient of the five sites are 29%, 97%, 28%, 71%, respectively. In addition, Chemical compositions of road sediments were characterized by field emission scanning electron microscopy and their possible sources were appraised (asphalt, brake lining materials, building materials, cement, tire dust, automobile exhaust and lubrication). This study will be conducive to our better understanding of the characteristic of RDS and provide a theoretical research for road sediment potential pollution caused by rainfall runoff.

*Key words:* chemical composition, heavy metal content, particle size distribution, RDS

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