Discrimination of sediment sources by using suitable fingerprinting properties
(Case study: Atary Catchment)

This contribution uses a combination of statistical procedure to investigate the
degree of discrimination of potential sediment sources by using suitable
fingerprinting properties. First the Kruskal-Wallis test has been used for eliminating
redundant fingerprint properties as a whole then discrimination function analysis
(DFA) was used to assess the discriminatory power of individual fingerprint
properties and composite fingerprints drawn from the individual groups of
fingerprint properties. Finally, a multivariate stepwise selection algorithm, based on
the minimization wilks’ lambda, was used to identify the smallest combination of
properties drawn from any group that provided the maximum discrimination of the
source categories. Statistical Analysis confirms that there is no single diagnostic
property capable of discriminating the range of potential sediment sources. The use
of composite fingerprints based on several constituents drawn from a single group
of properties consistently improves sediment source discrimination. Composite
fingerprints incorporating constituents selected from several groups of properties
using a stepwise statistical selection procedure consistently provide the most robust
discrimination of potential sediment sources. Results show that organic constituents
group of properties is extremely useful for sediment source discrimination in similar
catchments.

Keywords: sediment source, fingerprinting, Kruskal-Wallis

https://www.civilica.com/Paper-IREC08-IREC08_371.html
منظور تایید اصلاح این گواهی می‌توانید وضعیت تایید مقاله را از طریق لینک فوق به صورت آنلاین کنترل نمایید.