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## International Tracing Events 2021-2023 – Discussion and developments in sediment tracing

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Several innovative techniques have been developed recently opening up new avenues to establish the assessment of sediment flux in the critical zone. These techniques include the tracing or “fingerprinting” methods to identify sediment sources and quantify the dynamics of particle-bound contaminants. However, the use of these techniques is often associated with several methodological and statistical limitations, that are often reported by the international scientific community but rarely addressed in the framework of concerted actions.

This presentation will highlight the main developments and outcomes of the “International Tracing Day” 2022 and 2023, and the Tracing School organised in 2021. Based on the publication of an opinion paper (<https://link.springer.com/article/10.1007/s11368-022-03203-1>), new strategies to publish and disseminate sediment tracing databases will be presented. An example of a formatted dataset will be given, with the objective to test research hypotheses based on multiple datasets adopting the same format of data and meta-data. Other perspectives regarding improvements of the sediment fingerprinting method in terms of modelling, tracer options and selection will also be presented.