



## **7Be and hydrological model for more efficient implementation of erosion control measure**

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7BE AND HYDROLOGICAL MODEL FOR MORE EFFICIENT IMPLEMENTATION OF EROSION CONTROL MEASURES

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Increased concern about the on-site and off-site impacts of soil erosion in agricultural and forested areas has endorsed interest in innovative methods to assess in an unbiased way spatial and temporal soil erosion rates and redistribution patterns. Hence, interest in precisely estimating the magnitude of the problem and therefore applying erosion control measures (ECM) more efficiently. The latest generation of physically-based hydrological models, which fully couple overland flow and subsurface flow in three dimensions, permit implementing ECM in small and large scales more effectively if coupled with a sediment transport algorithm. While many studies focused on integrating empirical or numerical models based on traditional erosion budget measurements into 3D hydrological models, few studies evaluated the efficiency of ECM on watershed scale and very little attention is given to the potentials of environmental Fallout Radio-Nuclides (FRNs) in such applications. The use of FRN tracer <sup>7</sup>Be in soil erosion/deposition research proved to overcome many (if not all) of the problems associated with the conventional approaches providing reliable data for efficient land use management. This poster will underline the pros and cons of using conventional methods and <sup>7</sup>Be tracers to evaluate the efficiency of coonuts dams installed as ECM in experimental field in Belgium. It will also outline the potentials of <sup>7</sup>Be in providing valuable inputs for evolving the numerical sediment transport algorithm needed for the hydrological model on field scale leading to assess the possibility of using this short-lived tracer as a validation tool for the upgraded hydrological model on watershed scale in further steps.

Keywords: FRN, erosion control measures, hydrological models