



Calibrating landscape process modelling with Caesium-137 data and typhoon rainfall records

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Calibration of landscape evolution models (LEMs) needs long term input data on climate and soil redistribution. Rainfall data over the last decades can often be estimated from field stations and interpolation. A decadal estimate of soil redistribution can be derived from analysing the spatial variation of the Caesium-137 inventory in the soil. The objective of this case study is to calibrate LEM LAPSUS for a small watershed in Taiwan, using historical rainfall records and Caesium-137 derived soil redistribution estimates.

In general, the point location soil redistribution estimates from the Caesium-137 activity can be modelled with LAPSUS within a certain margin of error. However, the LAPSUS soil redistribution maps can differ considerably from the point-interpolation derived maps. This is mainly due to the process based LAPSUS methodology, where the DEM and water flow routing are the main driving factors.