



## **Visualising landscape evolution: the effects of resolution on soil redistribution**

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Landscape forming processes such as erosion by water, land sliding by water and gravity or ploughing by gravity, are closely related to resolution and land use changes. These processes may be controlled and influenced by multiple bio-physical and socio-economic driving factors, resulting in a complex multi-scale system. Consequently, land use changes should not be analysed in isolation without accounting for both on-site and off-site effects of these landscape processes in landscapes where water driven and or gravity driven processes are very active,. Especially the visualisation of these on- and off-site effects as a movie of evolving time series and changes is a potential valuable possibility in DEM modelling approaches. To investigate the interactions between land use, land use change, resolution of DEMs and landscape processes, a case study for the Álora region in southern Spain will be presented, mainly as movies of modelling time-series. Starting from a baseline scenario of land use change, different levels of resolutions, interactions and feedbacks are added to the coupled LAPSUS model framework: Quantities and spatial patterns of both land use change and soil redistribution are compared between the baseline scenario without interactions and with each of the interaction mechanisms implemented consecutively. All as a function of spatial resolution.

Keywords: LAPSUS; land use change; soil erosion, movie;