

# **MODELING THE ROLE OF SOLAR RADIATION ON LANDSCAPE ECOGEOMORPHIC DEVELOPMENT**

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The role of solar radiation on the composition of plant species and ecosystem productivity is well documented. The influence of aspect on the form of landscapes has also been quantified in various geologies in both northern and southern hemispheres. However, little is known on the coupled function of the ecogeomorphic system as catchments evolves through time, leading to the development of both varying hillslope aspects and their associated ecosystems. In this work, we explore the role of solar radiation in landscape ecogeomorphic development across a range of climates along a latitudinal gradient using a landscape evolution model, which effectively represents the coupling between geomorphic transport laws and ecohydrological dynamics. Model outputs are examined in terms of the differences in landscape geomorphic characteristics, erosion rates, ecohydrological fluxes, and vegetation patterns. Our preliminary findings suggests a strong control of latitude on the tempo of landscape development, hillslope asymmetry, and erosion frequency-magnitude character.