



Analogue modeling; the role of indenter geometry and erosion in double-vergent orogens.

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Analogue models have been used to investigate how changes in indenter geometry and erosion affect the rise of an orogenic wedge from the indented continent. Rigid indenters, representing cool strong continental crust, were driven laterally into hanging walls of sand, representing weak brittle crust. The amount of erosion and the angle of the frontal part of the indenter were varied.

All models resulted in a two-sided wedge rising between fore-kinkbands above the advancing toe of the indenter. Erosion and redeposition changes the pattern of strain partitioning in and around the model orogenic wedge and therefore affects both the thrust geometry and the vertical extrusion rate. Redistributing the load from the top of the wedge to its margins influences the wedge development. Less fore-kinks develop and remain active for a longer period if erosion is applied with an increase in rigid indenter dips.