



Erosion and Optimal Transport

Bjorn Birnir () and Julie Rowlett ()

(1) Department of Mathematics, University of California, Santa Barbara, CA 93106, USA (birnir@math.ucsb.edu), (1)
Hausdorff Center for Mathematics, Villa Maria Endenicher Allee 62, D-53115 Bonn, Germany (rowlett@math.uni-bonn.de)

We show that the land-surface equation of Birnir, Smith and Merchant, describing erosion of transport limited surfaces have unique weak solutions. The theory of optimal transport is then used to show that these equations constitute an optimal transport of the sediment by the water flow.