



## **Experimental rivers: the inevitability of Lacey's law.**

Francois Métivier, Olivier Devauchelle, and Eric Lajeunesse

University Paris Diderot, Sorbonne Paris Cité, Institut de Physique du Globe de Paris, Dynamique des Fluides Géologiques,  
Paris, France (metivier@ipgp.fr)

Small-scale model experiments have been used throughout the 20th century to address various problems in alluvial morphology, such as stream braiding or meandering. An analysis of the morphology of these experimental streams produced so far reveals that they all share common properties, despite different experimental settings. In particular, all the streams develop channels which size accords with Lacey's law. This property accords with the spontaneous generation of channels where the bed sediment is close to the threshold of motion. Deviation from threshold channel occurs mostly for braided streams. It is best seen in the aspect ratio of individual channels. Finally, we discuss some consequences of this "near treshold" behaviour and its application to natural streams.