FLOW RESISTANCE: TOWARDS A SLOPE-DEPENDANT MODEL

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Abstract

In presence of bedload transport it is difficult to measure the average velocity of the flow. As the sediment discharge increases, the use of a point gauge becomes difficult, even impossible when slopes become steep (1 to 10%). In this paper, we describe a velocity measurement technique based on image analyses. This method, inspired by the well known salt-velocity technique, appeared to be simple and reliable. Velocity measurements are used to investigate the flow resistance. Instead of considering dispersion of data around one unique logarithmic law, we propose an original slope dependent law.

Keywords: Flow resistance, Steep Slope, Bedload, Hydraulic experiment, Image analyses