



## Bedload integral

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In laboratory experiments, most of these transport relationships are expressed with respect to the bed shear stress and incorporate a power law regime with a  $3/2$  exponent above a critical value for motion inception. Nevertheless, in gravel bed streams, available studies seemed to show that conditions for this asymptotic regime to be observed are only rarely achieved. Using an extensive survey during three years along a mountain gravel bed stream in China, we show that, despite the very high variability of in-situ measurements, it is possible to derive for the bulk transport a clear power law relationship with an exponent  $3/2$  over more than 2 decades of the bed shear stress. Such an observation can be reproduced on smaller samples at different sites along the river as well as on the previous published datasets using a bedload integral instead of a section averaging technique. This raises the problem of how field survey have been performed over the last decades and show that local measurements at different points along the same section need to be systematically implemented in the future. Furthermore, considering the entire range of grain size, our data show there is no significant threshold effect on the bulk transport for values of the bed shear stress such as small as  $1 \text{ N/m}^2$ .