X Limerinos   1970

O Leopold, Wolman & Miller 1964, page 160

RESISTANCE (Friction) FACTOR: u/u^*

$\dfrac{1}{\sqrt{f}}$

RATIO of Mean DEPTH to BED MATERIAL SIZE: $d/D84$

"Relative Roughness"

The relation of channel bed-particle size to hydraulic resistance, with river data from a variety of eastern and western streams.

Resistance Factors, u/u^* and $1/\sqrt{f}$ are shown as a function **Relative Roughness**, i.e., a Ratio of mean water depth (**d**) to a bed material size index (**D84**) taken from field measurements.

Figure 103. Computation of velocity from a resistance factor and relative roughness (Leopold et al, 2000)