

CIVE 716 EROSION AND SEDIMENTATION

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Assignment #5 for Chapters 10 and 11 due on Friday December 9, 2011

Problem # 1 (100 points) SI Units

Consider the velocity and sediment concentration profiles of the Missouri River from problem 6.8 on p. 137. Answer the five questions of Problem 10.6 (E&S p. 259.

Additionally, determine the following:

- (f) Calculate the daily sediment load in metric tons per day from the method of Yang and compare with the measured sediment load in metric tons per meter per day from the sum of the products of velocity and concentration;
 - (g) Define the ratio u_*'/ω and find out if sediment is transported primarily as bedload or in suspension?
 - (h) Can you also estimate the ratio of measured load to total load when considering the measurements above the lowest point measurement of sediment concentration;
 - (i) What sampling technique would you recommend to measure the suspended load?
 - (i) Define the vertical time scale and the lateral length scale for turbulent mixing.
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