

Say when...

Our Liberty Mirror engineers will slice a light beam to order for you.

What wave lengths would you like? (In millimicrons, please.)

How much infrared? You tell us what you want to do with a light beam, and we'll give you a vacuum-deposited dichroic coating that will do it.

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May we serve you?



LIBERTY MIRROR

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TOLEDO, OHIO 43624

eliminate concentrations of energy loss and on the other tend to reduce the total energy loss to a minimum rate. The sine-generated curvature assumed by meanders achieves these ends more satisfactorily than any other shape.

The same tendencies operate through the erosion-deposition mechanism both in the river system as a whole and in a given segment of the river. The tendency toward uniform power expenditure in the entire river leads toward a longitudinal profile of the river that is highly concave, inasmuch as uniformity in the rate of work per unit of length of channel would be achieved by concentrating the steepest slopes near the headwaters, where the tributaries and hence discharges are small. The longitudinal concavity of the river's profile also minimizes work in the system as a whole.

Such a longitudinal concave profile, however, would lead to considerable variation in the rate of energy expenditure over each unit area of channel bed. Uniformity in this rate would be best achieved by a longitudinal profile that was nearly straight rather than by one that was highly concave. Actual river profiles lie between these two extremes, and meanders must be considered in both contexts: first, as they occur within the river system as a whole, and second, as they occur in a given segment of channel.

In the context of the entire river system a meander will occur where the material constituting the banks is comparatively uniform. This will be more likely to take place downstream in a floodplain area than upstream in a headwater area. To the extent that the meandering pattern tends to lengthen the downstream reaches more than those upstream, it promotes concavity in the longitudinal profile of the system, thereby promoting uniformity in the rate of energy expenditure per unit of channel length.

In the local context of a given segment of channel the average slope of the channel is fixed by the relation of that segment to the whole profile. Any local change in the channel must maintain that average slope. Between any two points on a valley floor, however, a variety of paths are possible, any one of which would maintain the same slope and hence the same length. The typical meander shape is assumed because, in the absence of any other constraints, the sine-generated curve is the most probable path of a fixed length between two fixed points.

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WFF 'N PROOF

The GAME for THINKERS



Can you solve
this problem?

1. There are three numbered statements in this box.
2. Two of these numbered statements are not true.
3. The average increase in I.Q. scores of those who learn to play WFF 'N PROOF is more than 20 points.

Is statement No. 3 true?

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