

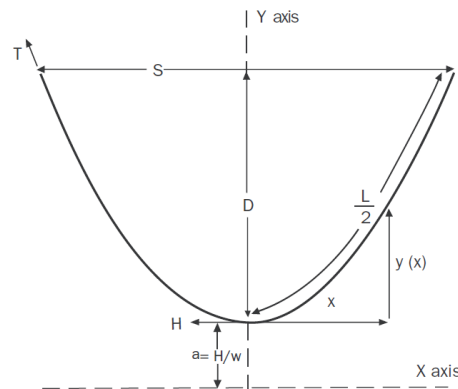
Sag10 Notice: Stringing module error for messenger calculations

A Sag10 user running a messenger-supported cable problem discovered that the ruling span chart did not agree with the values in the stringing charts. Early Alcoa and ACA versions of Sag10 were checked, and all versions have the same issue: the output of the ruling span calculations are, in some cases, not carried correctly into the stringing module. Users are cautioned to avoid reliance on the stringing module for messenger-supported cables. Designs based on the ruling span tensions are correct, but the stringing table sag calculations are seriously in error.

The bug will be corrected in the next Sag10 patch. In the interim, here are some quick fixes:

- 1) The stringing spans can be computed as a series of ruling spans. This is a common practice, and the sags are accurate enough for engineering purposes. Ruling span sags are slightly greater than stringing sags calculated using exact methods, so some conservatism is assured in the design.
- 2) An exact calculation is possible by following these steps:
 - a. Before running the ruling span calculations, go to tools/options, and set output tension to "horizontal tension".
 - b. Use the horizontal tension and conductor weight from the Sag10 ruling span table to calculate maximum sag using this equation:

$$D = \frac{H}{w} \left[\cosh \left(\frac{wS}{2H} \right) - 1 \right]$$



In the Imperial system, w : lb/ft, H : lb, and all linear dimensions are in ft.

In the SI system, w : N/m, H : Newtons, and all linear dimensions are in meters.

Registered Sag10 users may contact the Sag10 help desk for an Excel® spreadsheet that will run the stringing span calculations.